

APRIL, 1949

CHEMICAL PROCESSING

PREVIEW

The Magazine of
PROCESSING, ITS CONTROL AND DEVELOPMENT

Highlights

of this issue's 255 articles

... 255 articles of developments in processes, techniques, materials, equipment

* Specialty Paper Mill Saves \$3,750 in 3 Months by Recovering Stock from White Water ...

Fiber and filler are filtered off economically and returned to process; clear water from filtration suitable for showers, etc. 6

* Lubricate Synthetic and Natural Rubbers; Ease Release During Molding ...

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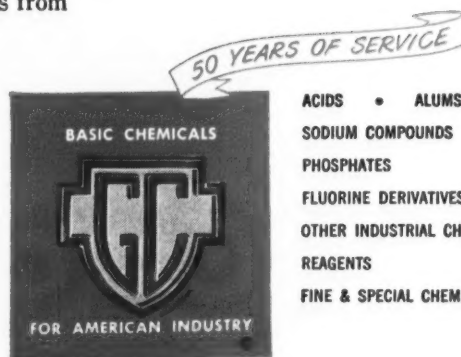
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"That's Interesting"

500 tons sulfuric acid daily produced by new plant

The largest single unit, sulfur burning, sulfuric acid plant built, has just begun operation at the Standard Wholesale & A Works, in Baltimore, Md. It is capable of producing 500 tons of sulfuric acid per day and was built by Chemical Construction Corporation, a unit of American Cyanamid Company.

Operation of the new 500 ton unit consists of three basic steps: burning of sulfur to form sulfur dioxide; oxidation of the sulfur dioxide to sulfur trioxide; and finally the absorption of the sulfur trioxide in sulfuric acid. The second step in the process involves the use of the Selden Vanadium Catalyst.

Baker's dozen of doughnut-furnaces heat seamless steel tubes

New doughnut shaped furnaces have been installed at National Tube Company, (U. S. Steel Corp. subsidiary), to heat pierce seamless steel tubes to high enough temperature so that they can be rolled to specified size. Tube sections fly through the hole of the thirteen doughnuts as fast as 240 feet a minute, emerging at the end ready for rolling at a temperature of 1800 degrees.

The hole in each doughnut is approximately 1½ feet in diameter and 3½ feet thick. Roller conveyors between the furnaces bring up each tube separately, whisking it through the heating chamber to the next conveyor.

These furnaces are constructed to accommodate tubes up to 45 feet long and 3 to 9 inches outside diameter. They are designed to heat for final sizing all types of alloy, stainless and carbon steel specialty tubing (both mechanical and pressure).

Asphalt-rubber highways built in East Indies

The addition of rubber powder to road materials to provide greater durability and anti-skid properties has been discussed in publications of the British Rubber Development Board. The Board experimented along this line some years ago, and roads in the East Indies constructed with asphalt-rubber mixture are still giving good service. Durability, anti-skid properties and less dust are claimed for such roads. (Armstrong Tire News—West Haven, Conn.)

Resin-emulsion paints are enjoying great demand

Since the war, the sale of emulsion paints has increased to about 20 million gallons per year. With water as the sole thinner, instead of turpentine and petroleum products, these interior coatings dry to a low sheen quickly and with little odor. Lithopone and zinc sulfides are very widely used in these finishes.

Aluminum 1-ton hoist weighs only 35 pounds

A new one-ton chain hoist weighs only 35 pounds. Thanks to liberal use of Alcoa aluminum alloys in its construction this hoist weighs 63% less than a similar hoist made of heavier metals. The aluminum hoist is also available in one-quarter, one-half and two-ton capacities from Chisholm-Moore Hoist Corp., Tonawanda, N. Y. (As reported in Alcoa Aluminum News-Letter)

Chigger resistant cloth

Phenyl carbonate and x, x-dichlorodiphenyl ether are listed by the U. S. Department of Agriculture as being the most promising compounds to be used to impregnate cloth to render it chigger resistant. (Patterson Engineer—Patterson Foundry & Machine Co., East Liverpool, Ohio)

(Continued on third cover)

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VOL. 12

APRIL, 1949

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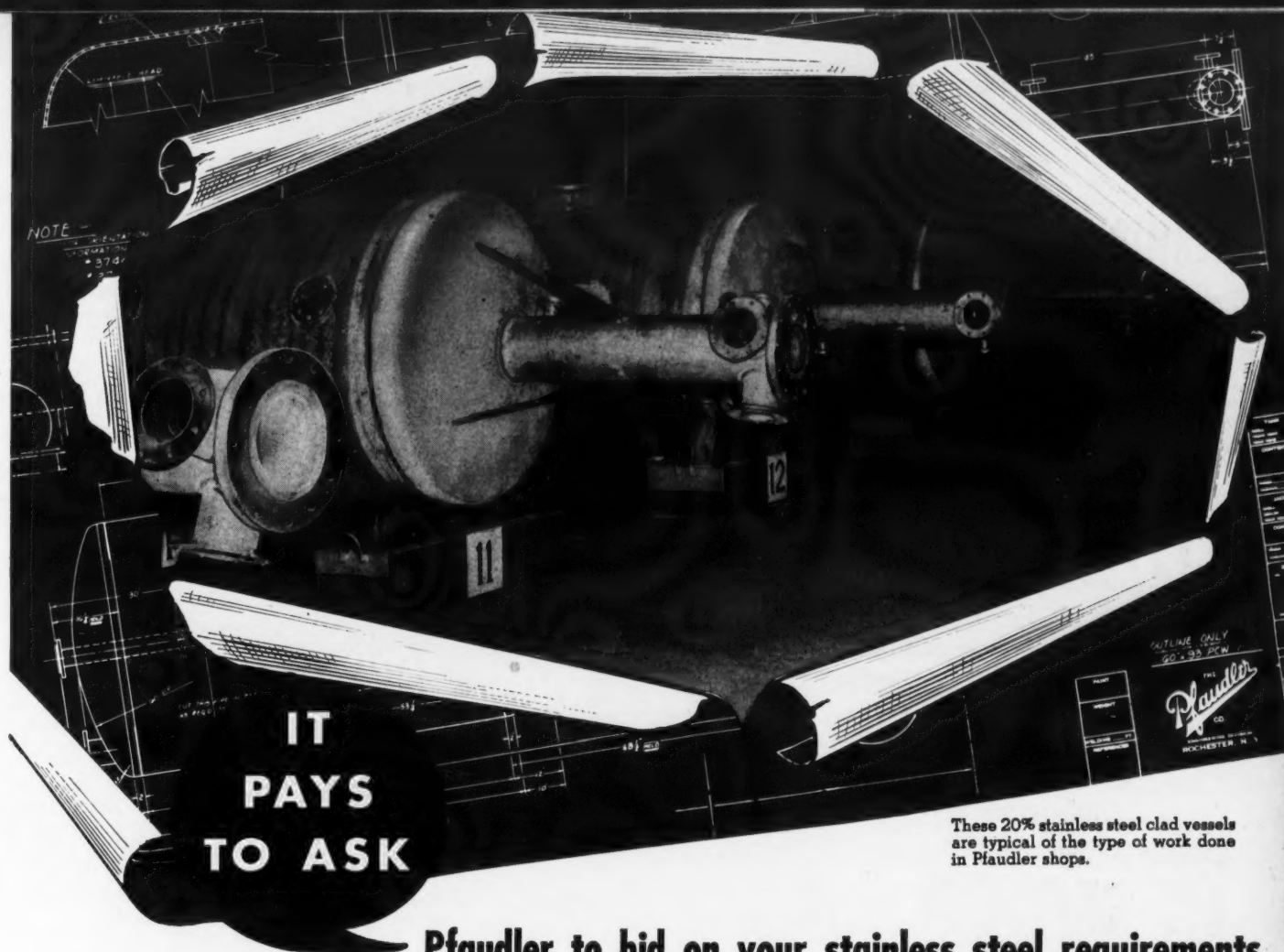
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*Alkyl dimethyl benzyl ammonium chlorides

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Highlights

(Continued from front cover)

These articles have been selected by the Editors as having unusual interest

* Filling of Drums with Free-flowing Powder Accurately Controlled by Pinch Valve . . . Full flow at beginning of weighing, with trickle flow at end, facilitates fast, accurate weighing . . . 6

* Pennsylvania Plant Boosts Production 100% by Slashing Paperboard Drying Time . . . Supplementary 'Counterflo' heater furnishes warm air to 18 perforated tubes between steam dryer-drums; air-flow speeds drying . . . 8

* Restore Warped Ends of \$15,000 Glass Making Roll with Machinable Alloy . . . 39 lbs. applied in 7½ hrs. then machined to desired dimensions in 6 hrs. . . 11

* Powder Form of Wet Strength Paper Resin Remains Stable During Long Storage . . . Water-soluble material improves retention of rosin size, other beater additives; increases pick-resistance, also wet-rub-resistance of starch-clay coatings . . . 14

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* Process Instrumentation Assures High Yields of Quality Pharmaceuticals at Searle . . . Controls temperature and pressure during variety of sensitive reactions; promotes efficient drying of hygroscopic materials . . . 30

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* No Pallets Needed in Transit; Truck Attachments Simplify Tying Loads . . . Loads are placed on paper sheets and moved on and off special pallets as required . . . 71

* Change Control Valves from Direct to Reverse Operation without Dismantling . . . Reversible top work permits change by simple adjustment; used in air, steam, liquid service . . . 80

CHEMICAL PROCESSING Preview

When inquiring check CP 9476 on handy form, pgs. 2-3

* **Rapidly Mixes Large Quantities of Heavy Pastes in 60 to 80% Less Time . . .** Intended primarily for vacuum operation, stainless steel mixer also useful at normal pressures 95

* **Pump Semi-solids through Pipes and Conduits . . .** Rotary pump handles any material that can be forced through pipes 108

* **Pre-freeze, Condense in Same Compressor with Flexible Freeze Dryer . . .** Requires neither dry ice nor desiccant; has 12 sq. ft. shelf area; requires little attention 124

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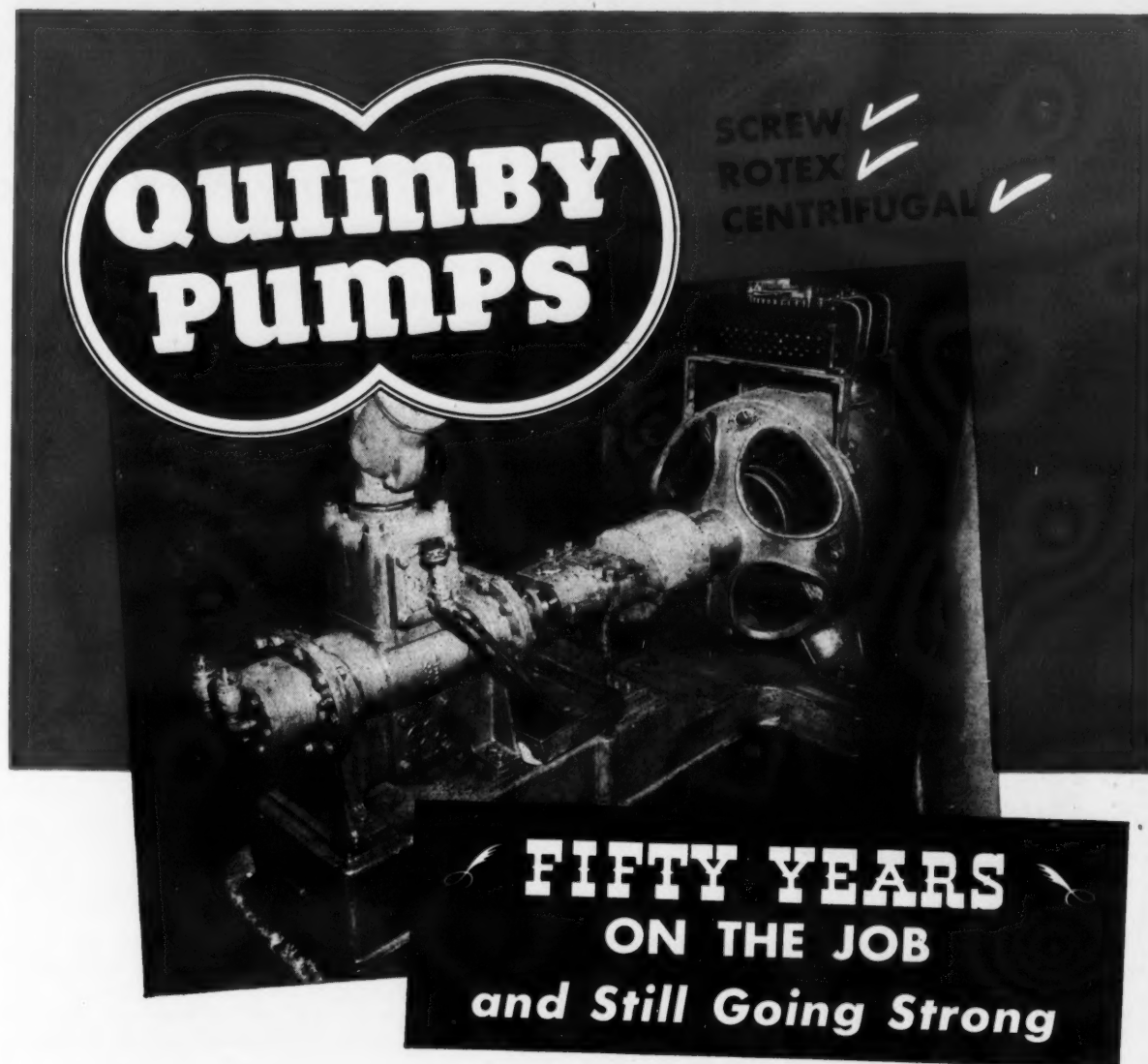
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1. **Product Directory** — "Quick-locator" of all types of materials, instruments, processing equipment . . . lists everything discussed in this issue, with page references 128
2. **To Get More Information on Products** . . . see Readers Service Department slip opposite page 2
3. **To Subscribe to This Magazine** . . . see Readers Service Department slip opposite page 130

Advertisers in This Issue 130

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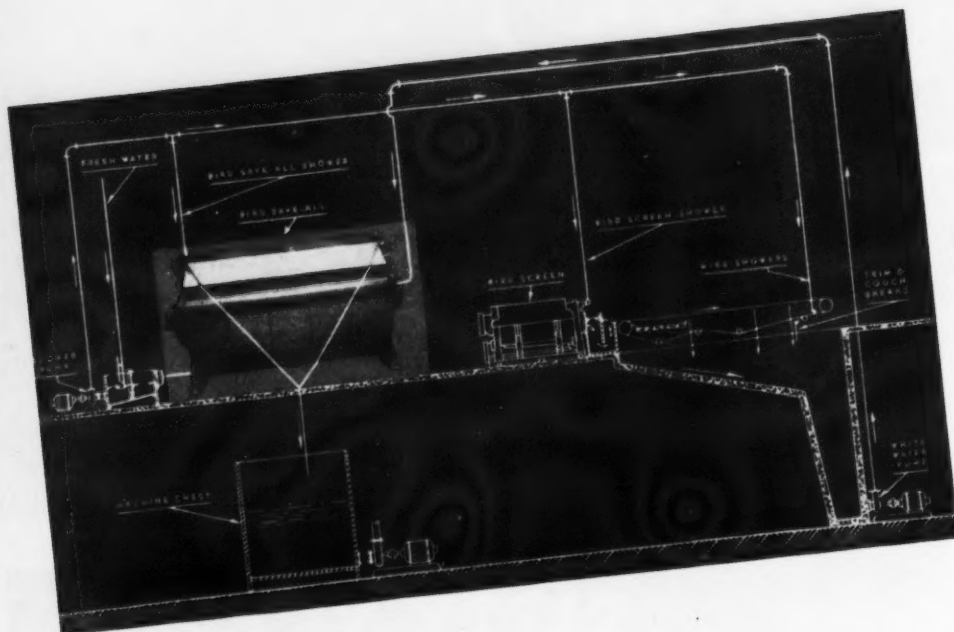
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Specialty Paper Mill Saves \$3,750 in 3 Months by Recovering Stock from White Water



Fiber and filler are filtered off economically and returned to process; clear water from filtration suitable for showers, etc.

Typical installation for recovering stock from white water in paper mill

with provision for introducing any proportion of fresh water. From this box, the effluent is pumped directly to screen and paper machine showers and the Save-All shower itself. It may also be used for control at regulating boxes, and any excess is used for filling and dumping beaters, in de-inking systems, pulp mill showers, etc.

Results: In order to obtain comparison of yields before and after installation of machine, the production manager kept particularly close check on production records for a 3-month period preceding installation and 3-month period following installation. These tests were made on company's No. 1 paper machine that trims around 50" and manufactures a high-grade cable paper. Results are typical of those obtained with other Save-All installations in plant.

It was found that the yield increased 11½%. This might seem to be small but, considering that about one million pounds of paper were manufactured by this machine in each of the 3-month test periods, the increase in yield represents 16,627 lbs. of additional paper — a saving of over \$3,750.

In addition, it is now possible to use the clarified water in the process again. It is filtered so free of stock that it can be used safely in showers.

Source: The Save-All is made by Bird Machine Company, Dept. CP, South Walpole, Mass. . . or for more information check CP 9478 on handy form, pages 2 and 3.

PROBLEM: Loss of stock in white water worried the production manager of a paper specialty mill. This fiber represented a substantial amount of expensive processing and it certainly was not economical to waste it. By recovering the stock and sending it back directly into process, it was obvious that yields could be increased.

Of course the water itself represented an expense, particularly when it had to be heated or filtered. So, the production manager reasoned, recovery of both the water and stock, in forms suitable for immediate re-use in process, should mean savings for the company.

Solution: Water and stock are being recovered by a unit called a Save-All. A typical simple installation is shown in diagram. The machine takes all the white water from the machine pit, and all trim and wet end broke.

This mixture of stock and water deposits a mat of fibers on surface of wire surface of cylinder, the built-up mat acting as a filtering surface. As fiber layer gets thicker, its resistance to flow increases, and water level on outside of cylinder rises. The cylinder remains stationary during this time. Filtering force is gravity only.

When a predetermined level is reached, float-operated switch starts cylinder drive. As cylinder turns, it exposes a fresh surface to incoming white water, permitting mat to again build up and white water level to decrease to a point where cylinder automatically stops again. This cycle is repeated intermittently.

A soft-covered couch roll picks fiber neatly from cylinder as it revolves. The fiber is removed from couch roll by self-balancing doctor with composition blade. A

self-cleaning shower pipe provides a knife-edge sheet of water to scour full width of outside of the cylinder after the periods when couch has removed the mat. Balanced valve, operated by link on float arm, turns on shower when cylinder is rotating and shuts it off when it stops.

Fiber and filler doctored off couch roll drops directly to machine chest and is at once ready to go back on paper machine.

Clarified water may flow through simple control box

Filling of Drums with Free-flowing Powder Accurately Controlled by Pinch Valve

Full flow at beginning of weighing, with trickle flow at end, facilitates fast, accurate weighing

PROBLEM: In supplying the demands of millers for its free-flowing vitamin mixtures for enrichment of flour, Merck & Co., manufacturing chemists of Rahway, N. J., packages the mixtures in fibre drums. These drums when sealed provide a container which assures

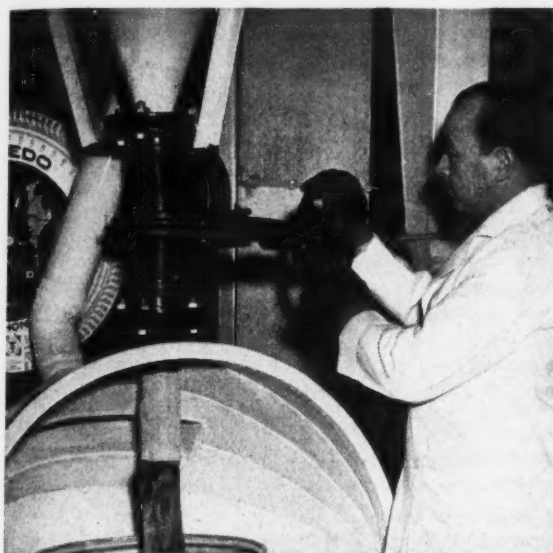
delivery of the vitamin mixture in a perfect condition.

In setting up the filling operation on a production schedule, it became necessary to secure some means of easily controlling the amount of the fill.

Solution: The drums are placed on a platform scale

which has a large circular dial making it possible to fill the drums accurately to the desired weight. By installing an industrial-size pinch valve on the gravity-feed line, the operator can easily adjust the flow to a mere trickle as the final weight is approached and shut it off instantly when it is reached.

The pinch valve consists of a rubber body specially compounded so that there is no undue resistance to flexing, providing endless flexing without fatigue and without breakdown. The manufacturer states that there is no known failure of the valve due to flexing fatigue. As



Operator adjusts flow of flour by means of pinch valve

shown in the photo, the pinching mechanism is mounted on one of the flanges of the valve.

Results: An otherwise awkward operation of filling to accurate weight has been placed on a smooth production basis. So satisfactory has been the performance of the hand-operated valve that an automatic motorized valve has been ordered.

Source: Farris Engineering Corp., Dept. FP, Palisades Park, N. J. . . . or for more information check CP 9479 on handy form, pages 2 and 3.

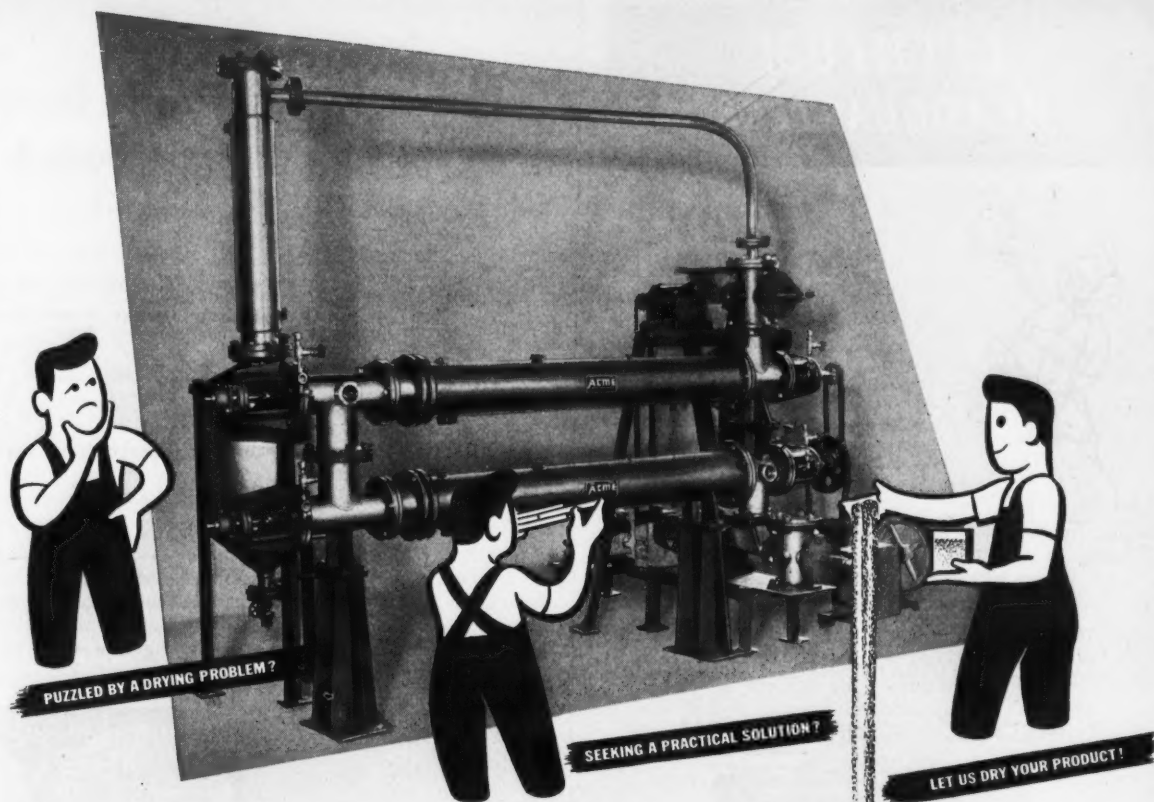
Use of chemistry in scientific conservation of resources

Articles by four authorities, covering relation of the chemical industry to conservation of natural resources, are included in 24-page booklet.

The possibilities opened to the chemical industry by the growing need for substitutes, for preservatives, and for more efficient methods of recovery of metallic and non-metallic minerals are outlined. Preservation of lumber, greater utilization of lumber resources, and protection of existing timber stands are discussed, emphasizing the areas in which chemistry can be expected to fill the need.

One article is devoted to the petroleum and natural gas situation; needs for better recovery methods and discussion of possibilities of artificial photosynthesis are included. The place of chemical fertilizers and poisons in agriculture and soil conservation are also discussed.

"Our Dwindling Resources", issued by Monsanto Chemical Co., Dept. CP, St. Louis 4, Mo. When inquiring specify CP 9480 on handy form, pages 2 and 3.



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When inquiring check CP 9481 on handy form, pgs. 2-3

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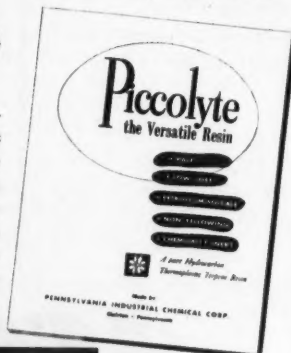
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When inquiring check CP 9483 on handy form, pgs. 2-3

Page 8

Pennsylvania Plant Boosts Production 10% by Slashing Paperboard Drying Time

Supplementary 'Counterflo' heater furnishes warm air to 18 perforated tubes between steam dryer-drums; air-flow speeds drying

PROBLEM: Heavy demands for paperboard to make various kinds of boxes and cartons were taxing production facilities of Durham Paper Board Company, Riegelsville, Pa.

Installation of a completely new paper machine of added production capacity was impossible at the time, due to shortage of such equipment. Attacking the problem from another angle, the company studied possibilities of meeting delivery schedules by reducing the drying time of a 50-year-old paper-making machine.



Bracket-mounted between steam drums, perforated warm-air tubes direct air-flow against paperboard. The increased warm-air supply sets up positive pressure, boosting efficiency of exhaust fans pulling moisture-laden air from machine

Solution: To do this, it was necessary to speed removal of moisture from the 60-inch-trim paperboard as it traveled over steam-filled drying drums in the machine's dryer-section.

A warm-air heating system was devised whereby large volumes of warm air, at high velocity, are discharged through perforated tubes running longitudinally between the drying drums. In this way, vapors are more readily absorbed and moist air more efficiently carried off through exhaust fans in the hood covering the dryer-section.

Paperboard enters wet end of dryer-section with about 40% moisture-content. This is reduced to 6% during passage through the dryer's 35 steam drums.

Steam for the drying drums is supplied at 40 lbs. pressure from a fuel-oil fired boiler, while warm air for the supplementary drying system is furnished by a Dravo Counterflo direct-fired heater equipped with a burner for No. 5 fuel oil. Operating continuously, the heater discharges 175° air into a 30" main duct from its location in the plant machine shop. This adjoins the room containing the dryer-section of the machine.

A booster fan, installed in air supply duct at base of the equipment, increases the normal 17,000-cu-ft-per-min air handling capacity of the heater. A damper arrangement supplies either recirculated air from within the plant or fresh air from outside. In warm weather, fresh air is used almost exclusively; cold weather requires that some recirculated air be used to maintain the 175° temperature. Btu capacity of the heater is 1,500,000 per hr.

Main duct leading to the dryer tapers from 30 to 20" size. Eighteen 8" branch ducts lead from the main to 5"-diam. perforated tubes between the dryer's steam drums. Each branch duct is individually dampered to permit shutting off air flow if one or more steam drums is out of service due to a broken pipe, or for other reasons.

Running full width of the dryer-section, each of the 5" tubes is 70" long. Perforations are spaced about an inch apart, in rows, along three sides of each tube. Hole-diameters vary in size to achieve uniform warm air discharge. Moisture-laden air is removed by three 48" exhaust fans in hood above dryer-section. Each is powered by a 3-hp motor.



Individual warm-air supply ducts from overhead 30" main connect with 18 perforated 5" tubes running between steam drums of drying section

In operation, heater pulls air into its base by means of double centrifugal fans on a single shaft and powered by a 10-hp motor. These force air upward over staggered banks of economizer tubes located just below combustion chamber in path of air.

Flue-gas twisters in the tubes "whirlcool" the gases leaving combustion chamber, thus fully utilizing the heat before gases are exhausted through vent stack. After flowing over economizer tubes, air sweeps entire stainless steel

CHEMICAL PROCESSING Preview

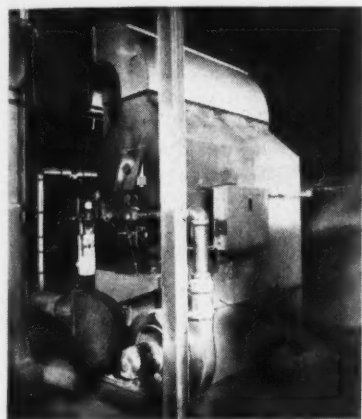
New Solutions
OF PROCESSING PROBLEMS

combustion chamber before being discharged into duct system. Velocity of this discharge is about 2000 fpm.

Only connections required to make this installation were power line, fuel oil piping and vent stack. A sheet metal plenum chamber, to which the 30" main duct is connected, was built around the 4 discharge outlets atop heater directly over the combustion chamber.

Results: Production up 10%, more than compensating for initial cost of installation, according to Peter Ferrara, plant manager.

80 to 85% heater efficiency is said to be achieved in the Dravo unit by means of "Counterflo" combustion principle. Starting at the burner, fuel oil and air are mixed, electrically ignited and sent swirling to rear of combustion chamber in a radiant flame. In a second pass, the flame returns to front of the chamber, providing a combustion path $2\frac{1}{2}$ to 3 times longer than in an ordinary "single pass" chamber.



A 10% production increase was realized by Durham Paper Board Co., Riegelsville, Pa., upon installation of this supplementary Dravo Counterflo heater, which speeds drying time of paperboard

heating of the combustion chamber. It is claimed that this method gives more time and space for complete combustion and achieves uniform heating of the combustion chamber

walls, against which the air is flowing. Additional air discharged around the drying drums from the Dravo heater has increased efficiency of exhaust fans in the hood above the dryer-section, it is reported, giving positive pressure for more suction. Also, despite operation at high temperatures 24 hrs daily, 6 days a week, the Dravo heater requires little maintenance — a fact which is attributed to resistance of the stainless steel combustion chamber to corrosion caused by high temperatures. No refractory lining is required in the chamber, thus permitting rapid transfer of heat from flame to air.

Source: Dravo Corporation, Dept. CP, Fifth & Liberty Aves., Pittsburgh 22, Pa. . . or for more information check CP 9484 on handy form, pages 2 and 3.

Uses of K. Fischer reagent in water analyses

460-page book on analytical procedures used in measurement of water details all known methods of using the reagent. Included are directions for application of reagent to quantitative determination of certain inorganic compounds and organic functional groups. Review of other methods, for comparison, is included. Illustrations and tables accompany text.

"Aquametry", by John Mitchell, Jr. and D. M. Smith, contains much previously unpublished data on determinations of free water and on quantitative analyses for organic functional groups. Remit \$8.00 direct to Interscience Publishers, Inc., Dept CP, 215 Fourth Ave., New York 3, N. Y. Or, when inquiring, specify CP 9485 on handy form, pages 2 and 3.

APRIL, 1949

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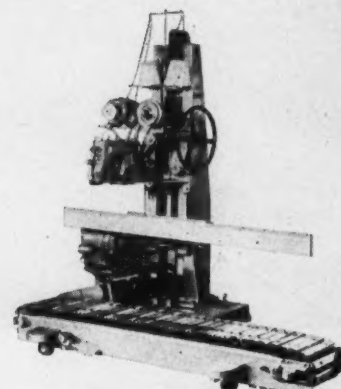
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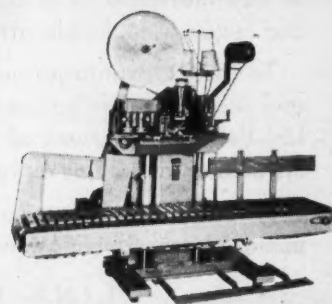
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When inquiring check CP 9486 on handy form, pgs. 2-3

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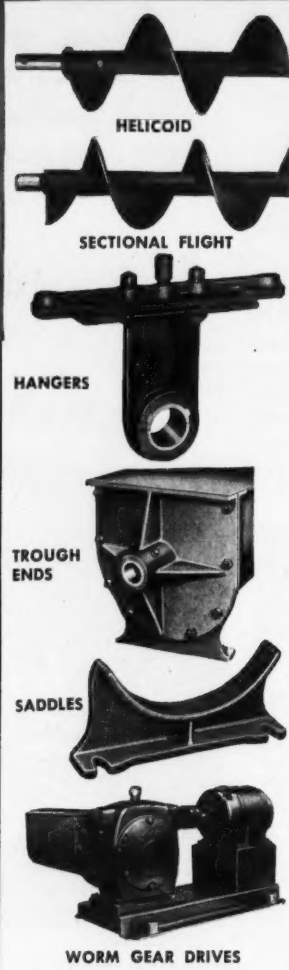
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Conventions & Exhibits Schedule 1949

- May 4-7. Electrochemical Society, Benjamin Franklin Hotel, Philadelphia, Pa.
- May 6-7. American Institute of Chemists (Annual Meeting) Edgewater Beach Hotel, Chicago, Ill.
- May 9-11. American Institute of Chemical Engineers, (Regional) Mayo Hotel, Tulsa, Okla.
- May 10-12. American Oil Chemists Society, (Annual Meeting) Roosevelt Hotel, New Orleans, La.
- May 12-13. Instrument Society of America, Royal York Hotel, Toronto, Canada.
- June 2-3. Manufacturing Chemists Assn. (Annual Meeting) Skytop Inn, Skytop, Pa.
- June 7-9. Synthetic Organic Chemical Mfrs. Assn., Shawnee Inn, Shawnee, Pa.
- Sept. 6-8. American Institute of Chemical Engineers (Regional) Mount Royal Hotel, Montreal, Quebec.
- Sept. 12-16. National Instrument Conference & Exhibit, Municipal Auditorium, St. Louis, Mo.
- Sept. 18-23. American Chemical Society, (National) Atlantic City, N. J.
- Oct. 17-21. National Metal Exposition, Cleveland, Ohio.
- Oct. 24-28. National Safety Congress Exposition, Chicago, Ill.
- Nov. 1-5. Pacific Chemical Exposition, Civic Auditorium, San Francisco, Calif.
- Nov. 14-18. 6th All-industry Refrigeration & Air Conditioning Exposition, Auditorium, Atlantic City, N. J.
- Nov. 28-Dec. 3. Chemical Industries Exposition, Grand Central Palace, New York, N. Y.
- Dec. 4-7. American Institute of Chemical Engineers, (Annual) William Penn Hotel, Pittsburgh, Pa.

1950

- June 8-10. American Institute of Chemical Engineers, (Regional) Hotel Statler, Boston, Mass.
- Sept. 10-13. American Institute of Chemical Engineers, (Regional) Minneapolis, Minn.
- Dec. 3-6. American Institute of Chemical Engineers, (Annual) Columbus, Ohio.

For more information on product advertised at left, specify CP 9487 . . . see information request blank between pages 2-3.

NEW SOLUTIONS of processing problems

Restore warped ends of \$15,000 glass making roll with machinable alloy . . .

39 lbs. applied in 7½ hrs., then machined to desired dimensions in 6 hrs

Problem: A huge precision-ground roll, used in glass manufacturing, was warped beyond specific dimensions as a result of the heat treatment involved. The machined ends were no longer concentric and the glass company was faced either with discarding the roll, on which \$15,000 had already been invested, or trying to build up the warped end and machining it down to size.



Warped machined end of glass making roll is overlaid with alloy ready for machining

Solution: The roll is 20 feet long, made of nichrome steel with 1020 steel welded on the ends. Corrugated wrapping (shown in photographs) covers the area that is precision-ground and polished.

This glass manufacturer built up the warped ends with Bronzochrom 185FC, a hard yet machinable alloy. A slight preheat was first applied to the entire length of the weld area, working around all sides to prevent overheating. The welding process was alternated from one end to the other and an air hose played on the polished roll to protect the entire section from overheating.



Finished surface of end shaft perfectly machined to concentric dimensions

Bronzochrom 185FC can be used in place of bronze welding and is a patented alloy, flux-coated for lowest heat applications, bonding at only 1000-1200 degrees F.

It is two to three times harder than usual bronze rods, and work hardens from Brinnell 180 to 235. The entire job on this roll used only 39 pounds of Bronzochrom 185FC size 3/16 inch and was done in 7½ hours. Only 6 additional hours were required for final machining.

Results: This exceptional welding job reclaimed the warped ends. Had this not been accomplished, the ends would have had to be cut off, new ones welded on at much greater expense than that of the procedure just outlined, at greater expenditure of time and labor.

Source: Bronzochrom 185FC is a product of Eutectic Welding Alloys Corp., Dept. CP, 40 Worth St., New York 13, N. Y. . . . or for more information check CP 9488 on handy form, pages 2 and 3.

APRIL, 1949



FROM ALKYD RESINS
TO DE-ICING PAINTS



*Nothing takes the place
of Glycerine*

Ask the man in the plant. He knows that the chemical properties of glycerine help build tough, durable alkyds and resin gums. He knows that he can count on its uniformity and ease of handling.

Ask the research man. He finds that glycerine fortifies many modern corrosion-proof coatings . . . that its plasticizing action adds flexibility to today's masking finishes . . . that its anti-freeze qualities are ideal for aircraft de-icing paints.

Ask any leader of the coatings industry—or almost any industry. He'll agree that for a combination of physical and chemical properties that no other product can equal . . . for well-proved performance in more than 1500 fields of application in modern industry—*Nothing takes the place of glycerine!*

GLYCERINE PRODUCERS' ASSOCIATION

295 Madison Avenue
NEW YORK 17, NEW YORK

Technical GLYCERINE NEWS

NEW-TYPE RESIN. Description: pale, semi-solid made by interaction of glycerine with rosin fraction of tall oil. Properties: tacky, stable, unaffected by humidity changes, has solubilizing action on many materials. Uses: has potential applications in protective coatings, soap, adhesives, and synthetic rubbers. (R-1)

★ ★ ★

NEW METHOD DETERMINES GLYCERINE COLOR. A faster, more accurate method has been developed in the research laboratories of the Glycerine Producers' Association. The method, which utilizes the spectro-photometer, corrects defects of the old visual Lovibond method. (R-2)

★ ★ ★

APPROVED FIRE-RESISTANT DECORATIVE FINISH. Alkyd resins form the base for a new finish for interior decoration approved recently by the Bureau of Standards of Appeals of New York City. The coating is formed by spraying specially prepared fibers onto a surface treated with a fire-resistant adhesive. (R-3)

★ ★ ★

NEW CORK SUBSTITUTE. Glycerine is employed as a plasticizer to produce flexibility in a new cork substitute patented recently. The compound is claimed to have bulk density and resilience comparable to natural cork. (R-4)

★ ★ ★

ANTI-STICK COATING. Major problem in the use of bitumen-coated steel sheets in building trades is the adhesion of the tacky sheets to each other in storage. Answer to the problem may be a new anti-stick coating in which glycerine is an essential ingredient. (R-5)

GLYCERINE PRODUCERS' ASSOCIATION, DEPT. 5
295 MADISON AVENUE
NEW YORK 17, N. Y.
I should like to receive more information on the source
of the items appearing in Technical Glycerine News.
I have checked below those items which interest me.
☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4 ☐ R-5
NAME
COMPANY
ADDRESS

When inquiring check CP 9489 on handy form, pgs. 2-3

Illustration indicates the care with which each part is designed and constructed for maximum service. Grades of Ampco aluminum bronze are varied for each part to deliver longest service and best performance.

Every part of the Ampco Pump resists corrosion

It's a special pump at no extra cost

You don't have to pay special production costs for bulky, over-size corrosion-resistant pumps. Ampco's centrifugal pump is a standard production model, designed to handle your corrosive and erosive liquids efficiently — and it's yours for a standard-model price.

Check these important Ampco Pump features

- Casing and Volute are streamlined for efficient conversion. Heavy cross-section prevents deformation. No blind tapping to invite corrosion.
- Wearing rings are centrifugally cast of Ampco Metal—wear and erosion-resistant to protect casing and cover, and maintain efficient running clearance.
- Strong, corrosion-resistant impeller withstands hydraulic shock, cavitation, and erosion by abrasives in suspension.
- Stuffing box is well-proportioned and extra-deep, constructed for heavy duty.
- It is the only bronze pump that can be repaired by welding with Ampco-Trode electrodes of proper grade to match the base metal.
- All sizes available for either pedestal or close-couple mounting.

Get complete information from your nearest Ampco Field engineer, today!



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When inquiring check CP 9490 on handy form, pgs. 2-3

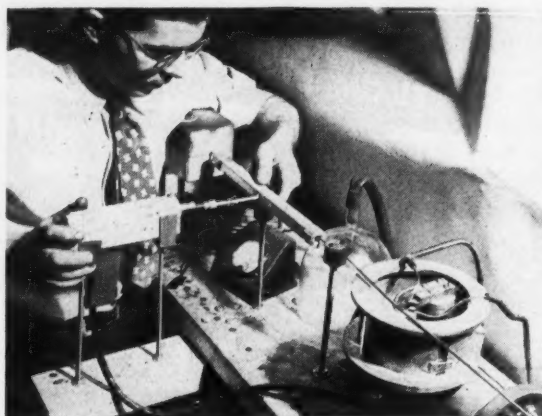
NEW SOLUTIONS of processing problems

Detect leaks in 13 miles of copper tubing . . .

reveal minute flaws, faulty brazing in tubing used as water-cooled conductor in vacuum chamber

Problem: General Electric Research Laboratory, in one of its projects, used 13 miles of copper tubing. This was intended for use as a water-cooled conductor to operate in a vacuum chamber and had a 1/8 inch outside diameter with a .015 inch wall. It was imperative that this tubing be free from even the smallest leak.

Solution: The coils, each nearly a mile long, were induction brazed from 100 foot lengths. At the same time they were wound on standard wire reels, with the inside brought out and equipped with a refrigerator type



Leaks as small as 1/100 oz. of Freon per year are revealed by this detector

valve. An empty nitrogen flask (actually containing nitrogen at 15 pounds per square inch absolute) was filled with Freon 22 to 110 pounds gauge, and then to 750 pounds per square inch with nitrogen. This gave a dilution of eight parts nitrogen to one part Freon.

This mixture was bled into the tubing with the far end open until samples of the escaping gas were found to contain Freon, detected by a General Electric Type H leak detector. The leak detector detects halogen vapors. As may be noted in the accompanying illustration, the device consists of a hand-held probe with a pistol grip. It contains a sensitive element and a fan which draws air into the detector unit. A power supply provides direct current for the detector anode, amplifier and fan motor. It provides alternating current for the detector filament.

When, as previously noted, the escaping gas shows a Freon content, the valve on the end is then closed and the pressure is built up to 600 pounds. All leak testing is done at 600 pounds per square inch to give a margin of safety since, because of the great length of the tubing, pressure of 500 psi is used to force the water through.

The preliminary bleeding of air from the tubing is necessary; otherwise there will be a length of tubing at the far end that contains only air. In this case the length would be approximately 100 feet.

Except for about five feet at the ends of the coils, which were tested by hand, the actual leak test was conducted by running the tubing through special pick-ups at about one foot per second, using a motor driven winding drum and a simple friction brake on the supply drum.

Results: In the first test, on 13 miles of tubing having approximately 675 joints, seven leaky joints, two porous

Have these
Good-rite
CHEMICALS
possibilities
for your use?

Oc1ccc(Oc2ccc(O)cc2)cc1
**Monobenzyl Ether
of
Hydroquinone**

Oc1ccc(Oc2ccc(O)cc2)cc1
**Dibenzyl Ether
of
Hydroquinone**

Monobenzyl Ether of Hydroquinone may be useful to you as an anti-oxidant, a stabilizer, a polymerization inhibitor or for organic synthesis. Its applications are in these and other industries: dyestuffs, explosives, drug, medicinal, petroleum, plastics and photographic.

Dibenzyl Ether of Hydroquinone is a high boiling inert solvent—suggested for use in the cosmetics, soap, plastics, pharmaceutical and related industries.

Both compounds available in commercial quantities. For further information, please write Dept. CE-4, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

B. F. Goodrich Chemical Company A Division of
The B. F. Goodrich Company
GEON polyvinyl materials • NYCAR American rubber • GOOD-RITE chemicals and plasticizers

When inquiring check CP 9491 on handy form, pgs. 2-3

BRIEFS...

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publications

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You get a "quick look" at the most valuable articles being published in this field, and kindred fields . . . by reading the "BRIEFS" section of CHEMICAL PROCESSING Preview every month.

Our Editors read more than 50 contemporary publications every month . . . select those articles they believe you will want to know about . . . and, in terse style, they tell you about them. Name of publication and issue are given so you can read those you want to know more about.

It's a monthly service . . . to save you time . . . yet keep you informed. See "BRIEFS" in this issue, page 52.

For more information on product at right, specify CP 9492 . . . see information request blank between pages 2-3.

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OF EVERY LADISH

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Spectrographic analysis is but one of many Controlled Quality tests conducted by the Ladish Metallurgical Laboratory.



TO MARK PROGRESS

Unsurpassed metallurgical standards... are important safeguards by which Controlled Quality assures Ladish fittings of maximum physical properties necessary for peak performance... extra protection that you value more with each added year of reliable service.



every piping system deserves the protection of Controlled Quality fittings

sections of tubing, and the joints were simply poor. There were 100 foot coils that were 100 foot coils that entire length. The folds closed up in drawing to casual inspection with the

Each reel was finally checked with gas, in an individual testing the box air for F. a leak. This joint may be on the reel after the first

Subsequent experience with Type H Leak Detector. No further tubing leaks. brazed joints failed mechanically.

Source: The Type H Electric Co., Dept. CP, more information check 2 and 3.

Welding repair procedure voids need for installing new aluminum tank.

leaky tank bottom quickly by inert-gas,

Problem: Aluminum non Manufacturing Company. Naturally, the company whole tank, but it appeared procedure would require more

Solution: Although Helium arc welding process, is tool, it was applied to this

Using a weaving technique which gave complete penetration from the outside. the outside. The outside was speed of 4" per minute, using

Inside welding was complete exception of cutting off complete job of assembly about 15 hours. The tank rollers to permit welders to position. Rope sling was

Results: Efficient repair time, making it unnecessary tank with a new one.

According to the maker initial cost of such equipment as a maintenance tool. Helium uses Heliwelding in its position in maintenance and repair

Source: Welding Process Reduction Sales Company, New York 17, N. Y. . . CP 9494 on handy form, 1

Covers pressure, draft differential gauges

Multi-pointer pressure gauge 2-color bulletin. Installation cut-away views supplement

Bul. 163-B, issued by Bala Ivanhoe Rd., Cleveland 10 CP 9495 on handy form, 1

NS of processing problems

ing, and three folds were found. The leaky
ply poor braze jobs. The porous sections
boils that had many leaks per foot over the
The folds were apparently ingot flaws that
rawing the tubing and were not visible
ion with the naked eye.

nally checked by putting it, fully charged
individual cardboard box for a week. Upon
air for Freon, one reel was found to have
int may have cracked when it was wound
r the first test.

erience with the tubing showed that the
Detector found all the leaks that existed.
ing leaks were found, although several
iled mechanically in later processing.

Type H Leak Detector is made by General
ept. CP, Schenectady, N. Y. . . . or for
on check CP 9493 on handy form, pages

Procedure Installing Tank . . .

bottom cut off, good one welded on
inert-gas, shielded-arc process

uminum peroxide-storage tank at the Can-
ring Company developed serious leaks.
company desired to avoid replacing the
it appeared that any satisfactory repair
require much time and labor.

ough Heliwelding, an inert-gas, shielded-
process, is usually considered a production
ed to this repair job with good results.

g technique, only one pass was made,
plete penetration and a slight reinforce-
outside. One finishing bead was made on
outside weld was made at an approximate
minute, using a single Heliweld holder.

was completed in 1½ hours. With the
ting off the defective tank bottom, the
assembling and welding was done in

The tank was placed horizontally on
welders to work in vertical or down-hand
sling was used to rotate tank as required.

ient repair performed in relatively short
unnecessary for company to replace the
one.

e maker of Heliwelding equipment, the
ch equipment precludes its exclusive use
tool. However, he points out, if plant
in its production, the use of the process
nd repair work should not be overlooked.

ling process is a development of Air
Company, Dept. CP, 60 E. 42nd St.,
I. Y. . . . or for more information check
ly form, pages 2 and 3.

Pressure gauges

Pressure gauges are described in 8-page,
Installation photographs, diagrams and
pplement text. Specifications included.

d by Bailey Meter Co., Dept. CP, 1050
Weland 10, Ohio. When inquiring specify
ly form, pages 2 and 3.

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Stokes the leader in the vacuum field. We
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As pioneers and constant workers in the
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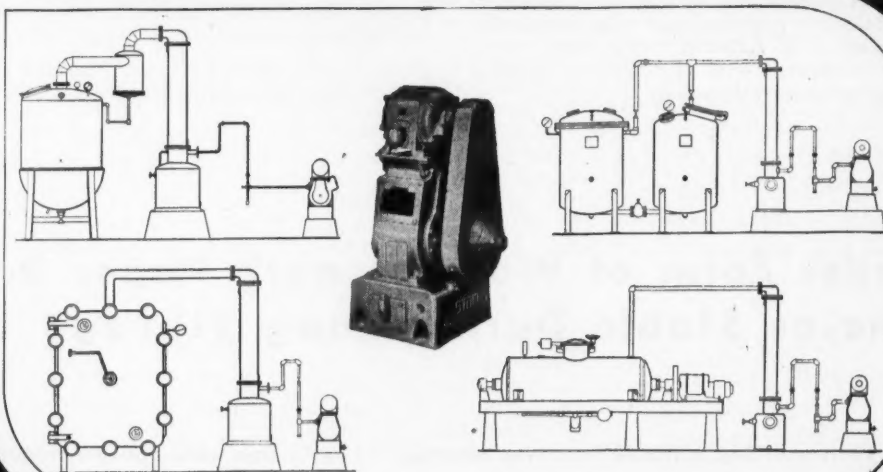
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F. J. Stokes Machine Company,
5974 Tabor Road, Philadelphia
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plications...
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ing, Shelf
and Rotary
Drying.



STOKES

KNOWS
HOW

When inquiring check CP 9496 on handy form, pgs. 2-3

Lubricate Synthetic and Natural Rubbers; Ease Release During Molding

Low solvent power makes lubricants useful in many applications, alone or mixed with solvents, other ingredients

USES: Employed in applications where it is necessary to lubricate rubber or prevent it from sticking. Used alone or with other solvents or ingredients, some of the more important uses include: lubricating, testing and protecting hydraulic brakes and other parts; lubricating rubber shackles, joints, packings and seals; preventing sticking of rubber slabs, soles, heels and gaskets. Also for lubricating knives, taps and other cutting tools used in rubber fabrication; parting agents to facilitate release of molded rubber articles from both exterior molds and mandrels; lubrication and conditioning of air bags used in rubber tire molding.

Features: These lubricants have low solvent power for most natural and synthetic rubber compositions.

Description: Suitable solvents, such as water, ethanol or isopropanol, are often used for dilution. In some cases lubricants are employed with soap, wetting agents, mica, clay, glycerol, silicone emulsions or other materials. Each rubber lubrication problem has its own particular solution, of course. The following suggestions, therefore, are to be considered only as guides in selecting "Ucon" lubricants for use with rubber.

For lubrication of tire bags, concentrations of 1 to 20% of lubricants in water are used with or without other materials. The 50-HB series is preferable for this use. The viscosity chosen within this series depends upon the rubber involved and individual preference.

Water solutions of 50-HB-3520, with or without suspended clay, are effective as anti-stick agents for uncured rubber. 50-HB lubricants, with or without clay, are used in machining hard rubber. Mixtures of 5 to 10% 50-HB-660 or 50-HB-3520 with water, ethanol or isopropanol have given excellent service as mandrel lubricants in curing rubber hose.

In molding of various rubber products, 50-HB series products, of various viscosities, are used in concentrations as low as 1% in water. Mixtures of the higher-viscosity uninhibited LB series lubricants with light petroleum oils are successfully used in molding battery cases. Among the rubber products molded with good results using "Ucon" lubricants are channels, gaskets, running boards, etc.

Undiluted LB-300-X effectively lubricates rubber packings, O-rings and seals. Formulations containing LB-1145,

corrosion inhibitors and alcohol diluents are effective lubricants and preservatives for rubber shackles and joints.

The following table shows effects of some of these lubricants on rubber. Values are the linear per cent swelling or contraction of stated samples after immersion for 5 days at 160°F.

| "Ucon" Lubricant | Natural | Buna S | Buna N | Butyl |
|---------------------|---------|----------|----------|-----------|
| LB-135 | 5 to 7 | — | 0 to 1 | — |
| LB-285 | 2 to 3 | 8 to 10* | 0 to —1 | 0 to —2* |
| LB-1145 | 0 to —2 | — | —1 to —2 | — |
| 50-HB-115 | 1 to 3 | — | 3 to 4 | — |
| 50-HB-260 | —1 to 1 | 1 to 2* | 0 to 1 | —2 to —3* |
| 50-HB-3520 | 0 to —2 | — | 0 to —2 | — |

*20 days at 212°F.

Source: Products of Carbide and Carbon Chemicals Corporation, Unit of Union Carbide and Carbon Corporation, Dept. CP, 30 E. 42nd St., New York 17, N. Y. or for more information check CP 9497 on handy form, form, pages 2 and 3.

Powder Form of Wet Strength Paper Resin Remains Stable During Long Storage

Water-soluble material improves retention of rosin size, other beater additives; increases pick-resistance, also wet-rub-resistance of starch-clay coatings

USES: Imparts wet strength and improves retention of rosin size and other beater additives during production of wide range of paper products. Lends better fold and increased pick-resistance to printing papers. Raises wet-rub resistance of starch-clay coatings.

Features: Made in powder form to permit easy long-term storage, a year or longer, without affecting useful properties adversely. This is an important feature

in mills where runs of wet-strength paper are sporadic or where storage and handling of liquid resins are impractical.

Description: Urea-formaldehyde resin, Uformite 520, is identical to liquid Uformite 467 except that it is in powder form. It is completely soluble in water, giving water-clear solutions. The resin is added directly to beater, fan pump, stuff chest, head box, or at

other points on wet end of paper machine where adequate agitation assures dispersion of resin in stock.

Solids content of solution is not critical, but should be 10% or lower for best mixing with pulp. It is recommended that dilution water be at least 50°F. As with Uformite 467, alum is specified for use with this powder resin. Normal procedure requires use of sufficient alum to reduce pH of stock to 4.0-4.9.

Like its liquid counterpart, this dry resin does not develop its full wet strength immediately after leaving machine: a natural aging period of 1-2 weeks is required. Because of this, broke recovery is accomplished readily without special precautions. Fresh broke may be returned directly to beater; aged broke can be defibered by raising temperature in beater to 140-160°F and adjusting pH of stock to 4.0-4.9 with alum or acid. Under such conditions, fully aged broke can be repulped in a matter of minutes.

As little as 0.5% resin greatly improves sizing efficiency of rosin. Improvements in pick-resistance of several numbers on Denison scale are reported on printing papers. Starch-clay coatings, with 10-20% added resin solids based on starch solids, are reported to have wet-

rub resistance equal to that obtained with casein formulations.

Source: Made by Rohm & Haas Company, Resinous Products Division, Dept. CP, Washington Square, Philadelphia 5, Pa. . . . or for more information check CP 9498 on handy form, pages 2 and 3.

Radiation Standards in Foil Form Fit Contour of Instrument

Point or linear sources for most radiation intensities ease calibration of Geiger counters, etc.

USES: Calibration of Geiger counters and other instruments measuring radioactivity.

Features: In addition to conventional type standard consisting of hermetically sealed capsule containing radium salt, company is making calibrated sources based on incorporation of radium or related elements into foil. This design makes it possible to fit source to configuration of instrument or counter tube with ease. It also permits accurate duplication of standards.

Description: This type of standard is available as point or linear source, calibrated for alpha, beta and gamma radiation. While radium is usually used as source of radiation, standards can be supplied that utilize a source of virtually pure beta or gamma radiation alone.

Methods of preparation are applicable to standards of almost any radiation intensity but can be particularly well applied to those of low intensity; these are normally the most difficult to prepare accurately. Stable and accurate alpha ray sources can be made with almost the same ease as beta and gamma sources.

Source: Manufactured by United States Radium Corporation, Dept. CP, 535 Pearl St., New York 7, N. Y. or for more information check CP 9499 on handy form, pages 2 and 3.

Puts Specular Finish on Aluminum

Chemical dip passivates surfaces, keeps them bright

Uses: Polishing centerless-ground or embossed aluminum rod and tubing.

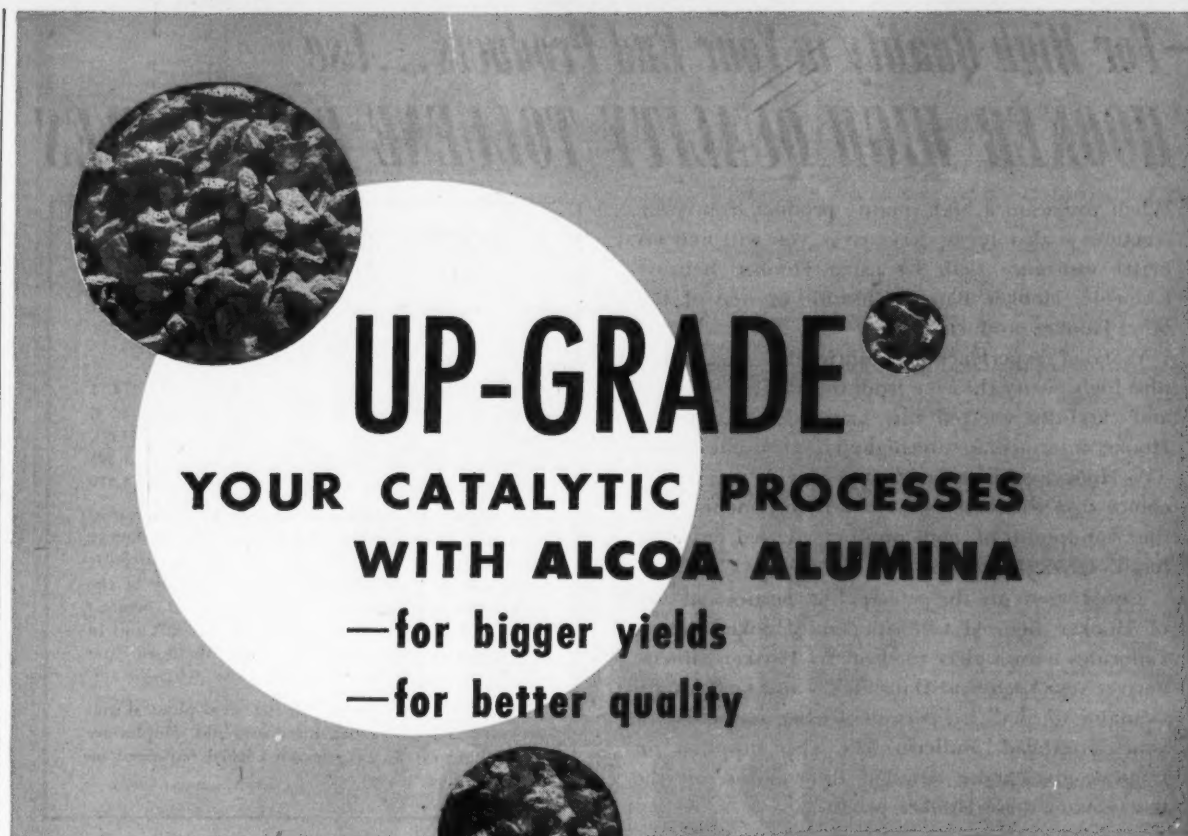
Features: Economical process requires relatively low investment; no mechanical polishing or buffing needed. Surfaces resulting are specular (mirror-reflective), and are passivated. When subsequently anodized, surfaces remain bright.

Description: Process involves simple dipping in specially formulated acid solution for a few seconds after grinding. It is recommended that about a No. 500 grit be used when grinding. Chemical-polishing can be done before or after fabrication or machining, but the latter is preferable. When subsequently anodized or colored (as with organic dyes), attractive reflective colors are possible. No lacquers, waxes or after-buffing are required.

It is reported that striking resemblances to polished and buffed gold, silver, copper, brass, bronze, nickel, chromium, platinum, rhodium, etc., can be achieved.

When chemical polishing is followed by chemical (non-electrolytic) oxidizing, bright and protected natural aluminum surfaces result.

Source: Technical Processes Division of Colonial Alloys Company, Dept. CP, Philadelphia 29, Pa. . . . or for more information check CP 9500 on handy form, pages 2 and 3.



If you want to up-grade your catalytic process yields, or simply reduce losses from contamination and side reactions, you'll find it advantageous to insist on ALCOA Aluminas for your Al_2O_3 catalysts and catalyst supports.

ALCOA Aluminas are uniform in structure and chemical purity . . . stable at elevated temperatures . . . have high resistance to erosion and crushing . . . and are moderate in cost. Typical conversions for which ALCOA Aluminas are used include: *Aliphatic hydrocarbons into*

★ **ALCOA Activated Alumina** is preferred for many reactions because of its high adsorptive properties and extremely large surface area.

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aromatics, and dehydrogenation of naphthenic hydrocarbons.

For top quality, specify ALCOA Aluminas for catalysts and catalyst supports. You'll get more efficient, uniform reactions and end-products of higher purity. We'll gladly send you samples and further information.

ALUMINUM COMPANY OF AMERICA,
CHEMICALS DIVISION, 1465
Gulf Building,
Pittsburgh 19,
Pennsylvania



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ALUMINUM FLUORIDE • SODIUM FLUORIDE • SODIUM ACID FLUORIDE • FLUOBORIC ACID • CRYOLITE

When inquiring check CP 9501 on handy form, pgs. 2-3

For High Quality in Your End Products... Use HOOKER HIGH QUALITY TOLUENE DERIVATIVES

When you want a high quality product from your reactions with toluene derivatives, you will find no better assurance than by using Hooker Benzoyl Chloride, Hooker Benzyl Chloride or one of the other Hooker products.

Years of experience in chlorination techniques plus high purity chlorine from the Hooker "S" Cell and carefully selected raw materials, make these Hooker intermediates the highest quality obtainable. Ten Hooker toluene derivatives provide you with a choice that will best meet your requirements from the standpoint of end product desired, ease of handling, yield and cost.

Listed below are the principal properties and uses of Hooker Benzoyl Chloride and Hooker Benzyl Chloride—most widely used of the Hooker toluene derivatives. Technical Data Sheets and samples are available to qualified personnel when requested on your letterhead. Bulletin 320, also supplied on request, gives more detailed information on the reactions of these Hooker products.

BENZOYL CHLORIDE

| | |
|---|----------------|
| Formula | C_6H_5COCl |
| Molecular Weight | 140.5 |
| Freezing Point | $-0.9^\circ C$ |
| Boiling Point | $198^\circ C$ |
| Refractive Index $n_{20/D}$ | 1.5536 |
| Flash Point | $72^\circ C$ |
| Fire Point | $85^\circ C$ |
| Specific Gravity, $15.5^\circ/15.5^\circ C$ | 1.219 |

DESCRIPTION

Colorless liquid possessing a pungent characteristic odor; it fumes when exposed to moist air.

USES

Benzoyl Chloride is a highly active chemical which can be used to introduce the benzoyl group into organic compounds, especially through Friedel-Crafts reactions. Other uses are in the manufacture of benzophenone, benzyl benzoates, synthetic perfumes, dyes and pharmaceuticals.

HOOKER RESEARCH PRESENTS BIS(TRIFLUOROMETHYL)BENZENE



| | |
|---|------------------------------|
| Molecular Weight | 214.11 |
| Freezing Point | -40° to $-50^\circ C$ |
| Boiling Point | $115^\circ C$ |
| Specific Gravity, $20^\circ/15.5^\circ C$ | 1.395 |
| Refractive Index, $n_{20/D}$ | 1.379 |

Hooker Bis(trifluoromethyl)benzene (xylene hexafluoride) is a clear, water white liquid. The product, a mixture of the meta and para isomers, is currently available in pilot plant quantities. A study of the literature indicates that it is of interest as a chemical intermediate in the preparation of dyestuffs and in the preparation of non-flammable dielectric and hydraulic fluids.

Technical Data Sheet No. 368 gives physical and chemical characteristics. Literature and samples are available to qualified personnel when requested on your business letterhead.

BENZYL CHLORIDE

| | |
|---|---|
| Synonym | Alphachlorotoluene |
| Formula | $C_6H_5CH_2Cl$ |
| Molecular Weight | 126.5 |
| Freezing Point | $-43^\circ C$ |
| Distillation Range | 5° or less including $179.4^\circ C$ |
| Refractive Index, $n_{25/D}$ | 1.5365 |
| Specific Gravity, $15.5^\circ/15.5^\circ C$ | 1.107 |

DESCRIPTION

Colorless to light yellow liquid having a pungent odor. The above data are for the high grade product. Also available as a technical grade with a wider distillation range.

USES

In manufacture of intermediates, dyestuffs, perfume bases, plasticizers, resins, wetting agents, rubber accelerators, gasoline gum inhibitors, pharmaceuticals.

OTHER HOOKER TOLUENE DERIVATIVES

BENZYL ALCOHOL, TECH. • BENZOIC ACID • BENZOIC ANHYDRIDE • BENZOTRICHLORIDE • BENZYL THIOCYANATE • METHYL BENZOATE • MONOCHLOROTOLUENE • SODIUM BENZOATE

HOOKER CHEMICALS

From the Salt of the Earth

HOOKER ELECTROCHEMICAL COMPANY

15 FORTY-SEVENTH ST., NIAGARA FALLS, N. Y.

NEW YORK, N. Y. • WILMINGTON, CALIF. • TACOMA, WASH.

SODIUM SULFIDE • SODIUM SULFHYDRATE • SODIUM TETRASULFIDE • CAUSTIC SODA • MURIATIC ACID • PARADICHLOROBENZENE • CHLORINE

When inquiring check CP 9502 on handy form, pgs. 2-3

MATERIALS

Plasticizers extend, modify, or develop properties of resins

Thorough, informative discussion of plasticizers is presented in 80-page, 4-color booklet. Used to enhance or control the natural properties of resins, they are also used to produce new, improved qualities not present in the resins themselves.

Phthalate, phthalyl glycolate, phosphate, and sulfonamide plasticizers are covered in detail. Physical constants, specifications and uses are given, and test results are included in charts showing flexibility, flame resistance, tensile strength, hardness, abrasion resistance, flow properties, water and oil resistance, and migratory tendencies of treated plastics.

Included are charts giving recommended plasticizers for specific resins in particular applications. "Monsanto Plasticizers", issued by Monsanto Chemical Co., Dept. CP, 1700 Second St., St. Louis 4, Mo. When inquiring specify CP 9503 on handy form, pages 2 and 3.

Micro-organisms yield to non-dusting material...

germicide-fungicide now available in easy-to-handle pellet form

Uses: Controls micro-organisms. Used by agriculture and industry to prevent losses caused by mold and bacteria.

Features: Originally available only in flake form, material is now also in the form of hard pellets. These pellets are more easily handled and do not dust.



Sodium pentachlorophenate, in pellet-form

Description: Dowicide G is water-soluble sodium pentachlorophenate. The small cylindrical pellets are compressed to $\frac{1}{4}$ the volume of the original flake. They are packed in 200-lb fiber drums marked "pellets" to distinguish from the flake.

Source: Product of The Dow Chemical Company, Dept. CP, Midland, Mich. . . . or for more information check CP 9504 on handy form, pages 2 and 3.

New silane chemicals are starting materials for organosilicons...

alkyltriethoxysilanes are useful in copolymerization

Uses: For investigational and process-testing studies in organosilicon field.

Features: Hydrolysis produces ethanol rather than hydrochloric acid, as alkyltrichlorosilanes do. All three ethoxy groups are reactive, and compounds are thus trifunctional. Hydrolysis and condensation reactions are not so rapid as for the corresponding chlorosilanes, and can be

CHEMICAL PROCESSING Preview

MATERIALS

controlled more readily to produce only partially hydrolyzed products. Liquid or linear polymers may thus be obtained and can be further condensed or blocked with monofunctional material. Alkyl-silicon bond is stable.

Description: Colorless liquid, soluble in most organic solvents. Boiling range 155° to 160°C for ethyl compound, 195° to 210°C for amyl compound. Density at 20°C is 0.895 g./ml. and 0.889 g./ml., respectively.

Source: Produced by The Linde Air Products Co., Dept. CP, 30 E. 42nd St., New York 17, New York . . . or for more information check CP 9505 on handy form, pages 2 and 3.

Severe corrosives powerless against metal coating . . .

odorless, tasteless, non-toxic plastic dries quickly to flexible, tough, abrasion-resistant film

Uses: Protects steel, aluminum, galvanized iron, ferrous, and non ferrous alloys from corrosion and fouling.

Features: Withstands effects of most severe acids, chemicals and salts for long periods of time. Resists chipping and peeling despite rough treatment. Odorless, tasteless and non-toxic coat of excellent toughness and flexibility. Non-inflammable, has good clarity and high resistance to age and weathering. Dries in less than 20 min, and is unaffected by temperatures to 200°F.

Description: "Metalast" coating system is based on vinyl and other plastic resins. Can be applied in atmospheric temperatures ranging from 5 to 90°F.

Maker reports that a large air conditioning equipment manufacturer whose equipment has uses in the textile and other industries found that coating gave greater protection from corrosion and completely eliminated the small amounts of rust that were carried through system and ruined merchandise and equipment.

Before application, metal surfaces are cleaned free of old paints, oil, grease and loose rust. Then, a washcoat primer is applied as single coat that serves as anchor for subsequent coatings. After this, the anti-corrosive coat is put on; this provides a tough barrier coat with tight inner coat adhesion, and is highly resistant to exterior corrosive elements. Finally, the top coat is applied. This varies with color desired and type of use.

Source: Being produced in quantity by C. A. Woolsey Paint & Color Co., Dept. CP, 229 E. 42nd St., New York, N. Y. . . . or for more information check CP 9506 on handy form, pages 2 and 3.

German data described, analyzed in report

Analyses of German experiments with artificial resins obtained from condensation of acetaldehyde under influence of aliphatic amines are contained in report. Other German data described include studies of nature of paraffin fatty acids and methods for their improvement through high-pressure saponification; techniques for efficient mixing of hot gases, etc.

Material was microfilmed in Germany by Office of Technical Services; analyzed in cooperation with British Government. PB 74994-S; \$2.50 in photostat form, \$1.75 in microfilm. Remit direct to Library of Congress, Dept. CP, Photoduplication Service, Publication Board Project, Washington 25, D. C. Orders should be accompanied by check or money order payable to Librarian of Congress.



PAINTS AND VARNISHES

Pine oils are used in the paint and varnish making industries as special solvents in alkyd and phenolic resin formulations, as wetting agents and levelers for baked enamels, dispersants for grinding pigments, and as anti-skinning agents. Pine oil is also used as a preservative, wetting agent, and anti-foam agent in casein—and water-emulsion paints.



MINING

In the mining industry, Hercules Pine Oils are used as frothing reagents in the flotation process. Low in cost, pine oils are effective frothers for the flotation of sulphide minerals—especially where a highly mineralized froth is required. Pine oils are also employed in the flotation of coal, potassium chloride, and talc.



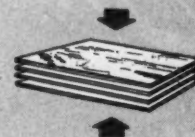
PAPER

Pine oils diverse properties are responsible for their wide acceptance in the paper industry. They are used as anti-frothers, casein preservers, and as wetters and spreaders in coating operations.



DISINFECTANTS

High in terpene alcohol content, Hercules Pine Oils are widely used in disinfectants. They are effective, low in cost, safe and easy to use, have a pleasing piney fragrance, long-lasting disinfectant action, do not stain.



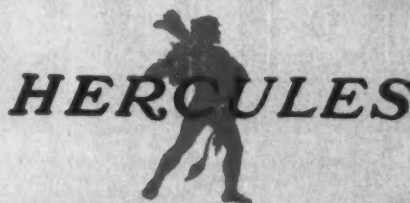
PLYWOOD ADHESIVES

Pine oils are used as anti-foaming agents, wetting agents, and protein preservatives in plywood adhesives. They perform a similar function in adhesives based on glue, casein, and starch.

YOUR INDUSTRY

Hercules Pine Oils have application in many other industries, such as the textile, soap, cleaners, drug, leather, rubber, and laundry industries. Possibly pine oils have new and desirable applications in your industry! Why not send for literature and testing sample?

HERCULES PINE OILS IMPROVE MANY PROCESSES AND PRODUCTS



HERCULES POWDER COMPANY
940 Market Street, Wilmington 99, Delaware
Please send me information and testing samples of pine oils for evaluation in _____
NAME _____
TITLE _____
COMPANY _____
STREET _____ TOWN _____ STATE _____
CITY _____

When inquiring check CP 9507 on handy form, pgs. 2-3

CHEMICAL

Stability

Plant and Personnel

Protection

● For many years "the only completely satisfactory answer to many corrosion and contamination problems," genuine Lapp Chemical Porcelain is now available in a series of valves completely armored in acid-resisting heat-treated silicon aluminum. Choose the Lapp armored porcelain valve over expensive alloy or lined valves for greater economy—chemical stability—plant and personnel protection against carelessness or accident. Standard bolt flanges integral with armor. Y-valves in 1", 1½", 2", 3", 4" and 6" sizes; angle valves in 1" and 2" sizes; flush valves in 1½", 2" and 3" sizes (for tank outlets 3", 4" and 5"). Write for descriptive literature and specifications. Lapp Insulator Co., Inc., Process Equipment Division, 123 Maple St., LeRoy, N. Y.



ANGLE VALVE



FLUSH VALVE

Lapp
**ARMORED
PORCELAIN
VALVES**



Y VALVE

Lapp

PROCESS EQUIPMENT

CHEMICAL PORCELAIN VALVES • PIPE • RASCHIG RINGS

PULSAFEEDER CHEMICAL PROPORTIONING PUMPS

When inquiring check CP 9508 on handy form, pgs. 2-3

MATERIALS

Covers specifications of cellulose ester plastics

Physical properties and resistance to chemicals of cellulose acetate and cellulose acetate butyrate plastics are exhaustively covered in a 44-page bulletin. Description of testing methods included. Use of latest ASTM testing methods result in slightly lower flexural strength values, slightly higher tensile strength values, than were shown in previous edition.

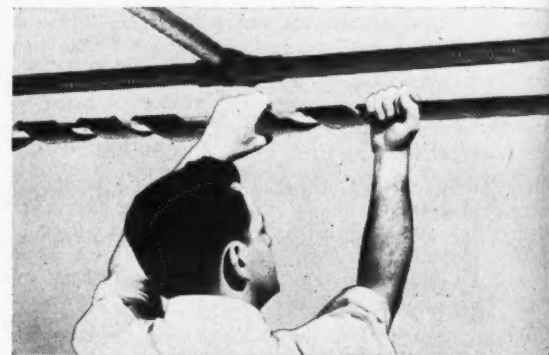
Fifth edition of "Tenite Specifications", issued by Tennessee Eastman Corp., Dept. CP, 10 E. 40th St., New York 16, N. Y. When inquiring specify CP 9509 on handy form, pages 2 and 3.

Checks condensation-drip of cold-water pipes; gains new storage space . . .

added pliability of cork-filled tape simplifies covering joints, tees, straight pipe, valves

Uses: Prevents dripping of condensation from cold-water pipes.

Features: Improved cork-filled tape is more pliable



Drip-proofing tape being applied

than its predecessor. Easy application on all parts of pipe line. By stopping dripping, method permits use of previous dead space under lines for storage, etc.

Description: Straight pipes, valves, joints and tees can be covered in a few minutes by winding NoDrip tape around them. No tools, adhesives or brads required. Pipes are wiped dry before applying the tape. Material is rich brown in color, but can be painted any color with cold-water paint.

Source: Development of J. W. Mortell Company, Dept. CP, Kankakee, Ill. . . . or for more information check CP 9510 on handy form, pages 2 and 3.

New polyethylene resin coating can be applied as hot melt; features low viscosity . . .

new polymer, used as wax additive, gives greater tensile strength, higher blocking temperatures

Uses: To coat paper, cloth, etc. on existing equipment. Other uses are to upgrade paraffin waxes and broaden choice of waxes for many applications.

Features: Coatings have high permeability to certain gases and resistance to passage of moisture vapor. Can be applied directly as hot melt.

Description: Low molecular weight polyethylene resin

CHEMICAL PROCESSING Preview

MATERIALS

is designated as DYGT. Lower viscosity, less brittleness are results of reduced carbon chain length.

Some physical properties follow:

Melt viscosity (130°C poises). 120
Softening temperature. 95°C
Molecular weight. 7000

Source: Produced by Bakelite Corp., Dept CP, 300 Madison Ave., New York 17, N. Y. . . . or for more information check CP 9511 on handy form, pages 2 and 3.

Stainless-clad steel can be drawn, welded . . .

combines corrosion resistance with malleability, ductility and strength of plain carbon steel

Uses: For fabricating vats, stills, mixers, kettles, tanks, other items exposed to corrosion on one surface.

Features: Sheets can be subjected to much deeper draw than is practical with solid stainless without intermediate annealing. No separation, no loss of corrosion resistance, it is reported.

Sheets can be arc welded, spot welded or soldered with ease because of heat dissipation provided by mild steel backing. Polished sheets can be drawn or stamped without damage to surface when protected by plastic coating, according to manufacturer.

Description:

Layer of stainless steel is diffusion welded to plain carbon steel backing. Available with special types of backing steels. Stainless layer is 10% of total thickness of sheets No.

Application of stainless-clad steel to batch-mixer construction

13 gauge and heavier; 20% of lighter sheets. Percentage of cladding increased if desired; supplied polished or unpolished.

Source: Produced by Alan Wood Co., Dept. CP, Conshohocken, Pa. . . or for more information check CP 9512 on handy form, pages 2 and 3.

Lists properties, applications of sodium, chlorine compounds

Methods of production, properties and applications of caustic soda, soda ash, bicarbonate of soda, liquid chlorine, hypochlorite products, sodium methylate, sodium chlorite and chlorine dioxide are covered in 32-page illustrated booklet. Description of stationary mercury cell for production of chlorine and caustic soda included.

"Mathieson Chemicals", issued by Mathieson Chemical Corp., Dept. CP, 60 E. 42nd St., New York 17, New York. When inquiring specify CP 9513 on handy form, pages 2 and 3.

APRIL, 1949

signposts to savings for CITRIC ACID USERS

Save on shipping expenses
with
CITRIC ACID ANHYDROUS

Save on storage, handling
with
CITRIC ACID ANHYDROUS

Anhydrous Citric Acid offers a more economical source of this acid, and at the same time you assure yourself of Pfizer quality. By using Pfizer Citric Acid Anhydrous you benefit from these savings:

First, you save on *shipping expense* because Pfizer Citric Acid Anhydrous contains no water of crystallization, and you pay freight only on the citric acid you buy and not on water! Figures show you pay freight on only 91.42 lbs. of acid instead of the full 100 lbs. of normal U.S.P. Citric Acid. This means over 8½% less on every freight bill!

Second, you save on *storage space and handling charges* because 10 drums of Citric Acid Anhydrous are equivalent to 11 drums of the U.S.P.

acid. This means you eliminate one drum out of every eleven you formerly stored and handled.

Citric Acid Anhydrous is a granular product, identical in purity with the U.S.P. Citric Acid, and differs only in that it contains no water of crystallization.

Solutions prepared with Citric Acid Anhydrous are identical with Citric Acid U.S.P. provided, of course, that you make allowance for the water always present in the U.S.P. acid. And, unlike the U.S.P. Acid, the Citric Acid cannot dry out, thus overcoming any possible variations in the resulting acidity of your solutions. For further details, please inquire of Chas. Pfizer & Co., Inc., 630 Flushing Ave., Brooklyn 6, N. Y.; 211 E. North Water St., Chicago 11, Ill.; 605 Third Street, San Francisco 7, Calif.

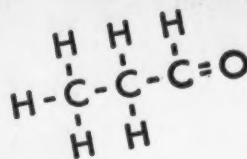


PFIZER

Manufacturing Chemists Since 1849

When inquiring check CP 9514 on handy form, pgs. 2-3

CELANESE* PROPIONALDEHYDE



*Now Available
in Volume*

Propionaldehyde, formerly produced in pilot plant quantities, is now on the Celanese list of major chemicals, and available in tank car quantities. With properties midway between acetaldehyde and butyraldehyde, this aldehyde has the typical highly reactive qualities of the aldehyde group. It can be used to enhance the properties of many products wherein other aldehydes are now used.

FORMALDEHYDE • ACETALDEHYDE

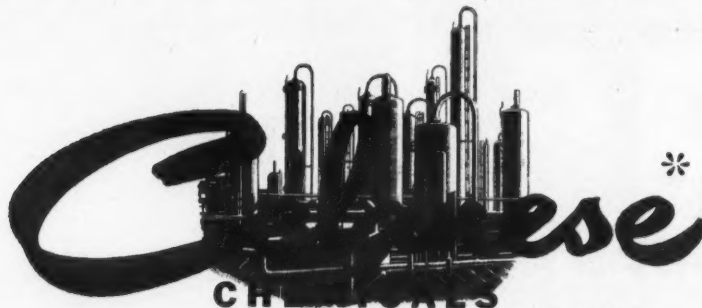
As a large volume producer of important industrial aldehydes, Celanese offers these chemicals in the quantities you need. Formaldehyde—sold commercially as Formalin—is 40% formaldehyde by volume, 37% by weight. It is obtainable

in both methanol inhibited and uninhibited grades. Acetaldehyde is supplied at better than 99% purity to meet the most rigid industrial requirements.

ALDEHYDES AND DERIVATIVES

Celanese is now in position to furnish you with special aldehydes and aldehyde derivatives to fit your specific end uses. Our research and production experience gives you assurance of prompt service, high quality, and low cost.

Look to Celanese for technical assistance in adapting these chemicals to your industrial needs. Celanese Corporation of America, Chemical Division, 180 Madison Avenue, New York 16, N.Y.



*Reg. U. S. Pat. Off.

ALDEHYDES • ALCOHOLS • ACIDS • SOLVENTS • GLYCOLS • KETONES • PLASTICIZERS

When inquiring check CP 9515 on handy form, pgs. 2-3

MATERIALS

Cleaning and pickling acid offers corrosion control

Technical data sheets describe new cleaning and pickling acid for ferrous metal. It is stated that necessity of vapor degreasing is eliminated. Positive corrosion control is "built into" acid, treated and rinsed metal remaining free of corrosion for several days. Acid used in conjunction with "fix" remains corrosion-free up to 12 months, it is reported.

"Technical Data Sheets on 'Nielite' C Acid", issued by Nielco Laboratories, Dept. CP, Detroit 19, Mich. When inquiring specify CP 9516 on handy form, pages 2 and 3.

Magnesium additive produces ductile cast iron . . .

metal combines process advantages of cast iron with product advantages of cast steel

Uses: To produce ductile cast iron by introduction into molten iron of small amount of magnesium or magnesium-containing addition agent, such as nickel-magnesium alloy. Iron produced has properties applicable to machinery in general, such as crankshafts, machine tools, pumps, compressors, and valves. High ductility may provide far greater thermal shock resistance than previously available; superior resistance to growth and oxidation also suggest use at elevated temperatures.

Features: Nickel-magnesium alloy is operative with practically all basic types of cast iron. Process can be applied to common cast iron compositions melted in the cupola or other furnaces.

Iron combines fluidity, castability, and machinability of grey cast iron with high tensile strength, high elastic modulus, and ductility. Strength is only moderately affected by section thickness; features proportionality of strain to stress, up to high loads.

Description: Small amount of alloy incorporated into melt causes formation of graphite wholly in form of spheroids. For pearlitic grades of cupola-melted material containing 3.2 to 3.6% carbon and 1.8 to 2.8% silicon, the iron provides, in the as-cast condition, a combination of 85/105,000 psi tensile strength, it is reported. Modulus of elasticity is reported to be 25,000,000 psi.

Source: Patent pending to The International Nickel Co., Inc., Dept. CP, 67 Wall St., New York 5, N. Y. . . . or for more information check CP 9517 on handy form, pages 2 and 3

Combine fire, solvent and moisture resistance in inorganic insulation . . .

made of mineral wool and resin binder in form of sheets, lagging and pipe insulation

Uses: Especially designed for service within the temperatures of minus 400 degrees F. and plus 250 degrees F. and for application on tanks, vessels and pipes where fire resistance and immunity to solvents are of importance.

Features: Moisture absorption is 0.0 after 96 hours in air of 75% relative humidity, and water absorption is only 2.0% by volume after being submerged for 24 hours.

Description: "Zerolite" insulation is made of mineral wool and a resin binder. It combines high fire

CHEMICAL PROCESSING Preview

NEW CHEMICALS FROM DU PONT

1,4-DICHLORO- BUTANE



1,4-DICHLOROBUTANE is a rarity among organic intermediates—an alpha, omega aliphatic dichloride. The highly reactive chlorine atoms can be replaced by sulfur, cyanogen, amine, alkoxy, aryloxy, and other groups. The following examples illustrate the versatility of 1,4-dichlorobutane and will suggest many other reactions.

1,4 - DICHLOROBUTANE

- WITH Sodium Cyanide
→ Delta-chlorovaleronitrile and Adiponitrile
- WITH Alcohols and Phenolates
→ Chloroethers and Diethers
- WITH Alkali Metal Salts of Weak Organic Acids
→ Esters of 1,4-Butylene Glycol
- WITH Sodium Sulfide
→ Tetrahydrothiophene
- WITH Sodium Phthalimide
plus hydrolysis
→ Tetramethylene Diamine

PHYSICAL PROPERTIES

Appearance. Colorless, mobile liquid
Odor.....Mild, pleasant
Molecular Weight.....127.02
Boiling Point...155°C. at 760 mm.
Specific Gravity, 20/4.....1.141
Index of Refraction, N₂₀/D.....1.4542
Flash Point.....125.6°F.
Solubility.....Insoluble in water.
Soluble in most common organic solvents.

AVAILABILITY

1,4-Dichlorobutane is available in ample quantities for research and development purposes. A request on your company letterhead will bring further technical information and also a sample if desired. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Field Research Section, Wilmington 98, Delaware.

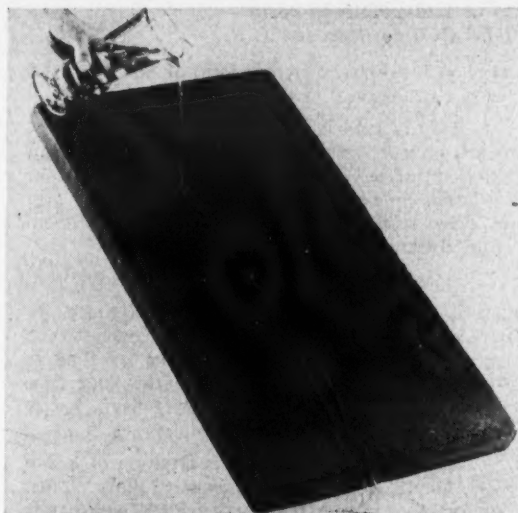


Better Things For Better Living...Through Chemistry

DU PONT
ELECTROCHEMICALS
FIELD RESEARCH SECTION

When inquiring check CP 9518
on handy form, pgs. 2-3

MATERIALS



Sheet of inorganic insulation is unharmed by repeated subjection to solvents, such as benzol

resistance, immunity to many organic solvents, and excellent moisture resistance with low heat conductivity. The low heat conductivity values for "Zerolite" at several mean temperatures are .28 at 70 degrees F., .25 at 0 degrees F., and .22 at -70 degrees F.

Source: "Zerolite" insulation is produced by Johns-Manville, Dept. CP, 22 E. 40th St., New York 16, N. Y. . . . or for more information check CP 9519 on handy form, pages 2 and 3.

Floor-drying material does not pack or mat . . .

light-weight granular compound retains structure, won't "dust" during application

Uses: To absorb oil, grease, kerosene, water from working and walking surfaces.

Features: Lightweight granular material retains structure, does not mat or pack. Minimum "dusting" during application, higher absorption per pound is reported by manufacturer.

Description: Compound is designated as "Industrial Floor-Dry No. 85". Light in color, material has high reflective value even when saturated with oil.

Source: Produced by The Eagle-Picher Co., Dept. CP, Cincinnati, Ohio . . . or for more information check CP 9520 on handy form, pages 2 and 3.

Information on patent law problems and questions

Illustrated 220-page book discusses patent procedure and problems from standpoint of the executive and engineer. Subjects covered include patent purchase and license agreements, patent infringements, patent pools, foreign patent protection, and special problems of the chemical industry.

"Patent Law", by H. A. Toulmin, Jr. Remit \$2.95 direct to Research Press, Inc., Dept. CP, 137 N. Perry St., Dayton 2, Ohio. Or, when inquiring, specify CP 9521 on handy form, pages 2 and 3.

says the professor



Knowingly-scented bait will catch more fish . . . in more ways than one! For instance, MM&R chemists have added a nose-tickling smoked character to smoked ham wrappings, killed the heavy odor of reclaimed oil, delicately scented dress labels! Let MM&R add scent-appeal — or taste-appeal — to your product too!

**Think it over—
then, call on
MM&R**

Dept. C-1

Builders of PRODUCT PREFERENCE
through QUALITY ESSENTIAL OILS,
PERFUMING MATERIALS and
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SINCE 1895...ONE OF THE WORLD'S GREATEST SUPPLIERS OF ESSENTIAL OILS
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Los Angeles: Braun Corp. • Seattle, Portland, Spokane: Van Waters & Rogers, Inc. • San Francisco: Braun-Knecht-Heimann-Co.

When inquiring check CP 9522 on handy form, pgs. 2-3

Use a CARBIDE Ester ... in Your Lacquer

The high purity and uniformity of Carbide's ester solvents are important considerations in maintaining high standards of quality in the manufacture of lacquers.

| | B. P.°C. | |
|--------------------------|-------------|---|
| CELLOSOLVE Acetate | 156.4 | |
| Methyl Amyl Acetate | 146.3 | |
| Butyl Acetate | 126.3 | |
| ISOPROPYL ACETATE | 88.4 | Isopropyl Acetate is an efficient, stable, low-boiling lacquer solvent with a toluene-dilution ratio of 3.0 |
| Ethyl Acetate | 77.1 | |

CARBIDE AND CARBON CHEMICALS CORPORATION



UNIT OF UNION CARBIDE AND CARBON CORPORATION UCC NEW YORK, N. Y. OFFICES IN PRINCIPAL CITIES

Cellosolve™ is a registered trade-mark of C. & C. C. C.

When inquiring check CP 9523 on handy form, pgs. 2-3

STABELAN

The BETTER STABILIZER for VINYLs against heat and ultra-violet Breakdown

TROPIC-TESTED under the hot sunshine of Southern Florida, STABELAN has proved its ability to extend aging 2 to 3 times over ordinary stabilizers for P.V.C. and Resin copolymers . . . Two types assure a BETTER stabilizer for resistance to sunlight, ultra-violet and high temperature processing.

WRITE for Bulletin giving complete data on STABELAN types and uses.

HARWICK STANDARD CHEMICAL CO.

AKRON 8, OHIO

BRANCHES: BOSTON, TRENTON, CHICAGO, LOS ANGELES

When inquiring check CP 9524 on handy form, pgs. 2-3

MATERIALS

Viscosity of low-pressure resin 50,000-65,000 centipoises . . .

material with polyester: styrene ratio of 80:20 is used in plastics laminating, molding and casting

Uses: In plastics laminating, molding or casting operations, this low-pressure resin is used to improve laminating work by thicker surface coating; to decrease flow of resin prior to gelation in molding; to improve control of pigment and filler suspension in casting operations; or to increase film thickness of dip coatings.

Features: Has viscosity of 50,000-65,000 centipoises.

Description: Paraplex P-43HV is identical to tough, rigid Paraplex P-43 except that it has a polyester:styrene ratio of 80:20 instead of 70:30. Viscosity of P-43 is 2,000-2,400 centipoises. Both grades use the same base polyester and both are filtered, sparkling-clear, nearly water-white liquids.

Source: Made by Resinous Products Division of Rohm & Haas Co., Dept. CP, Washington Square, Philadelphia, Pa. . . or for more information check CP 9525 on handy form, pages 2 and 3.

Makes Isovaleraldehyde available in commercial amounts . . .

potential uses in preparing pharmaceuticals, resins and rubber include vitamin A synthesis

Uses: Potential uses in manufacture of pharmaceuticals, synthetic resins, and as a rubber accelerator. An aldehyde with isoprene carbon chain and reactive end group, the compound is used as starting material in organic synthesis. Suggested as possible starting material for vitamin A synthesis.

Features: Now available in commercial quantities.

Description: Isovaleraldehyde has boiling point of 92-93°C, specific gravity of 0.785 and normal density of 1.390 at 20°C. It is slightly soluble in water and is miscible with organic solvents.

Source: Produced by Millmaster Chemical Company, Dept. CP, 551 Fifth Ave., New York 17, N. Y. . . or for more information check CP 9526 on handy form, pages 2 and 3.

Apply coating directly over rusted metal . . .

rust preventative requires rusted surface for bond; brushing or scraping is only preparation required

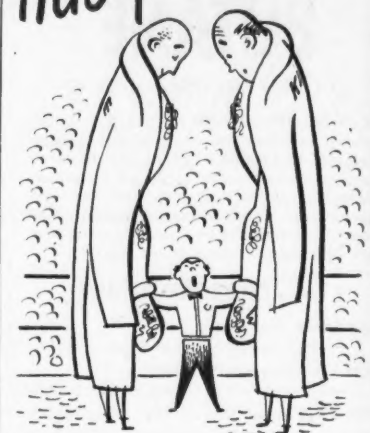
Uses: To prevent further corrosion of rusted metals that cannot easily be cleaned of rust.

Features: Requires rusted surface to bond with metal. Wire brushing or scraping of rust scale is only preparation needed. Preventative on rusted panels held up to 723 hours in salt fog cabinet using 20% sodium chloride at 95°F; coated rusted sheet steel showed no breakdown after 5 years exposure on outside weather-rack, manufacturer reports.

Description: Rust preventative coating with fixed percentage of phosphoric acid incorporated into vehicle. Pigment added to provide "tooth" for subsequent painting.

Source: Manufactured by Nielco Laboratories, Dept. CP, Detroit 19, Michigan . . . or for more information check CP 9527 on handy form, pages 2 and 3.

Everyone has problems



When I tap you
on the shoulder . . . break clean!

VICTOR CHEMICAL WORKS

If yours happens to be electropolishing

Investigate

VICTOR PHOSPHORIC ACID

The process of electropolishing aluminum, brass, stainless steel, and similar alloys involves the removal of irregularities and foreign deposits from the surface of the metal, making possible a uniformly smooth, brilliant surface. Today this process is successfully applied by using large percentages of Victor phosphoric acid in the electropolishing bath formulae. Technical data and other profitable information are available upon request. Write today, or mail the handy coupon below.

VICTOR CHEMICAL WORKS

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Investigate Now! MAIL THIS COUPON TODAY!

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Gentlemen:
Please send additional information on Victor phosphoric acid for electropolishing.

Name _____

Title _____

Company _____

Street _____

City _____ Zone _____ State _____

V5

When inquiring check CP 9528 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

MATERIALS

Field tests prove dust base controls insects well . . .

uniform blend readily mixed with diluents, fungicides; leaves no residues toxic to vegetation

Uses: Insecticide dust base which controls wide range of chewing and sucking insects attacking truck crops, and vegetable and flower gardens.

Features: Extensive field tests in 15 states over period of 5 years demonstrate highly effective control. The base leaves no harmful residues which are toxic to vegetation. Provided in uniform blend of active insecticide ingredients so that its mixture with diluents and fungicides presents no problems to manufacturers, it is reported.

Description: CPR dust base is combination of piperonyl cyclonene, pyrethrins and rotenone, formulated to obtain maximum effectiveness of the potent ingredients. It has been found that use of pyrethrins in the combination increases effectiveness 2 to 3 times.

Insecticide containing 20% CPR dust base, used at 20-40 lbs per acre, gave complete control, even of the blister beetle, when put on tomatoes and potatoes. Nearly 100% control of the Mexican bean beetle and cucumber beetle resulted when snapbeans were dusted at 25-30 lbs per acre and cucumbers at 40 lbs per acre. Control of the cabbage looper, at dosage of 25-30 lbs per acre, was termed excellent.

Source: Development of U. S. Industrial Chemicals, Inc., Dept. CP, 60 E. 42nd St., New York 17, N. Y. . . . or for more information check CP 9529 on handy form, pages 2 and 3.

Stops slime; preserves paint and glue . . .

dustless pellets dissolve rapidly; resist breakage well

Uses: Slime control in cooling-water systems, paper mills. For sapstain control, paint and glue preservation, allied applications.

Features: Free-flowing pellets go into solution quickly under static conditions because they do not paste. Material in this form is easily packed and shipped; high resistance to breakage in handling or shipping. Relatively dustless.

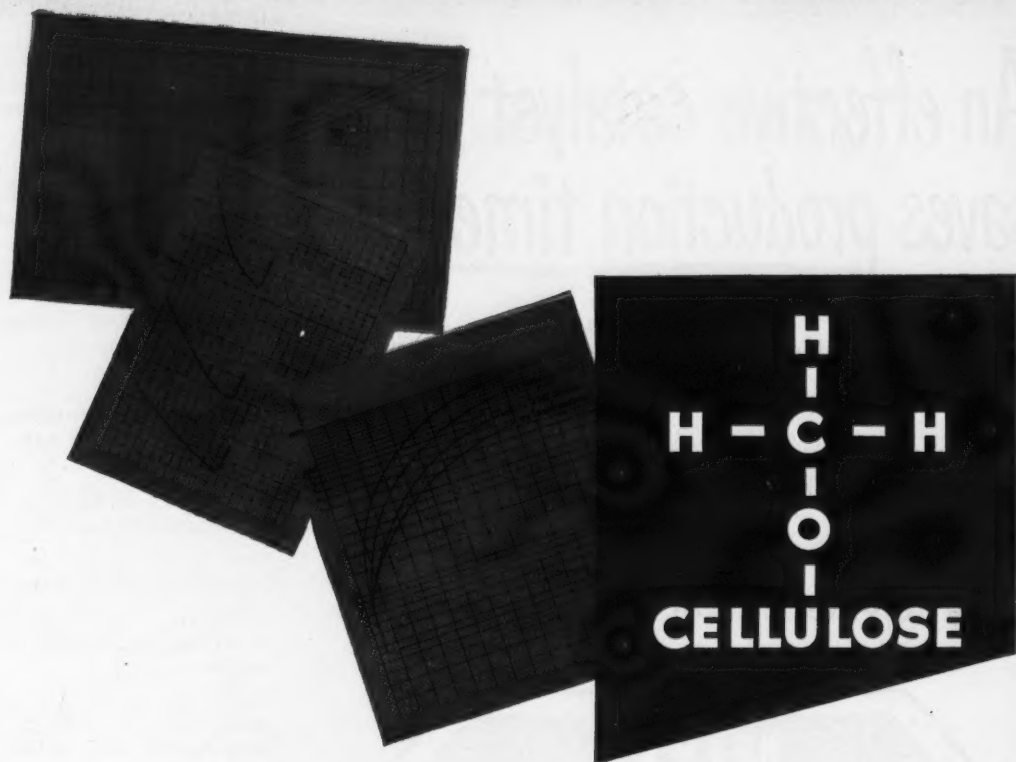
Description: Santobrite consists of seed-like kernels of sodium pentachlorophenate. The granular form is achieved by addition of a nonadulterating agent. There is no decrease in assay over previous forms.

Source: Manufactured by Monsanto Chemical Company, Dept. CP, St. Louis 4, Mo. . . . or for more information check CP 9530 on handy form, pages 2 and 3.

Handle chemicals, abrasives in enclosed flight conveyor

Flight conveyor designed for dust-proof operation in the chemical industries is described in 4-page, 2-color bulletin. It reportedly handles any flowable material such as abrasives, free-flowing chemicals, etc. Regularly spaced, circular flights on rubber-covered, preformed cable are driven through standard steel tubes.

"Cable-Veyor", issued by Hapman Conveyors, Inc., Dept. CP, 2405 W. McNichols, Detroit 21, Michigan. When inquiring specify CP 9531 on handy form, pages 2 and 3.



What can Methocel do for you?

Methocel, a cold water-soluble cellulose ether yields neutral solutions in a wide range of viscosities, varied to suit diversified applications. Methocel is outstanding as a thickener, suspending agent and emulsion stabilizer. It also serves as an excellent binder and film former. Countless diversified industries including rubber, paint, leather, paper, ceramics, soap and cosmetics, and the drug industry find Methocel of value.

Investigate the new METHOCCEL now available in powdered form to facilitate its use. Send for free, experimental sample of the new METHOCCEL, powdered.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

THE
new

Methocel

SEND FOR EXPERIMENTAL

SAMPLE!



The Dow Chemical Company
Dept. ME-168-2
Midland, Michigan

Please send me free sample of the new Methocel, powdered.

Name and Title _____







Firm _____

Address _____



When inquiring check CP 9532 on handy form, pgs. 2-3

An effective catalyst that saves production time for-

-  Alkylation
-  Acylation
-  Condensation
-  Dehydration
-  Polymerization
-  Esterification

MIXED ALKANESULFONIC ACID

...has demonstrated its effectiveness in many catalytic applications. Take time to see if it will save time on your processes.

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CHEMICAL PRODUCTS

INDOIL CHEMICAL COMPANY
910 South Michigan Avenue • Chicago 80, Illinois

When inquiring check CP 9533 on handy form, pgs. 2-3

MATERIALS

Dimethoxy methane exhibits broad solvent properties

Bulletin gives specifications, physical properties, handling directions and uses of methylal (dimethoxy methane). Uses as a resin solvent, especially for nitro-cellulose and vinyl resins; as a reaction medium, as an intermediate, and as a specialty fuel are cited.

Bul. S-08-1, issued by Celanese Corp. of America, Chemical Division, Dept. CP, 180 Madison Ave., New York 16, N. Y. When inquiring specify CP 9534 on handy form, pages 2 and 3.

Improved heat stability, flow properties in new acrylic powder . . .

highly fluid acrylic molding powder can be molded at higher temperatures

Uses: To produce heat-resistant articles which require molding qualities of general purpose acrylics.

Features: Can be molded at temp. from 360°F to 490°F; thinner, more intricate sections requiring greater fluidity become practical.

Acrylic has greater fluidity at lower temp. than had its predecessor. It can be molded into thick sections at lower temperatures, thus cooling and hardening more rapidly with less shrinkage and shorter molding cycle.

Description: Available in colorless crystal and transparent, translucent, and opaque colors. Increased color stability and luster is reported for the acrylic.

Source: Produced by E. I. du Pont de Nemours and Company, (Inc.), Dept. CP, Wilmington 98, Delaware. . . or for more information check CP 9535 on handy form, pages 2 and 3.

Puts even lacquer coat on tumbling parts . . .

covers metals completely, with use of fewer coatings

Uses: Lacquer is specifically designed for coating metal parts in tumbling equipment.

Features: Coat is uniform. It is reported that fewer coats are required for complete coverage. High resistance to "sticking" and excellent adhesion.

Description: Performance has been proved by laboratory tests and actual production use. Available in variety of colors.

Source: Metric Lacquer Manufacturing Co., Inc., Dept. CP, 62-70 Woolsey St., Irvington 11, N. J. . . or for more information check CP 9536 on handy form, pages 2 and 3.

Performs lubrication tests on four samples in 25 minutes

Four-page bulletin pictures oil-inspection kit designed to test for asphaltic contaminants; dirt, other sediment and water; acidity and viscosity of lubricating oils. It is reported that all tests can be completed in 25 minutes for four samples. Describes centrifuge, test tubes, and supplies.

Bul. 300, issued by The Gerin Corp., Dept. CP, Red Bank, N. J. When inquiring specify CP 9537 on handy form, pages 2 and 3.

Control Corrosion With

ALOX ESTERS

Synthetic methyl esters of long chain oxygenated hydrocarbons derived from partially oxidized petroleum fractions by the Alox process.

Effective Control of Corrosion in:

- Internal Combustion Engines
- Hydraulic Systems
- Turbine Systems
- Fabricated steel parts during processing, storage or shipping

ALOX 350 is rich in polar molecules . . . of high molecular weight. As little as 1% of this additive is found to be effective in producing the metal wetting and anti-corrosive characteristics desired.



Write for new ALOX Technical Bulletin No. 3 covering description, listing of chemical and physical properties, and suggested uses of ALOX 350.

**ALOX
CORPORATION**
3277 BUFFALO AVENUE
NIAGARA FALLS, NEW YORK

When inquiring check CP 9538 on handy form, pgs. 2-3

MATERIALS

Mold release compound does not affect gloss, cause flash . . .

improves plastic flow, does not deposit on mold surfaces

Uses: For improving plastic flow and reducing time lost by adhesion.

Features: Compound improves plastic flow without causing flash or contaminating product. Finish of product unaffected; does not build up deposits on mold surfaces.

Description: Mold lubricant for use in compression and injection molding. Tested on combs and filigree articles and found effective, according to manufacturer.

Source: Produced by Moldrite Products Co., Dept. CP, 145 Garden St., Pawtucket, R. I. . . or for more information check CP 9539 on handy form, pages 2 and 3.

4 grades of high purity sodium tungstates . . .

range from pharmaceutical to commercial purities

Uses: For medical solutions, textile dyes, printing inks, radiology applications.

Features: Grades range from .0009% molybdenum to .02%; .01% to .02% insoluble matter; .005% to .05% chloride; .005% to .05% sulphate.

Description: White, crystalline, water-soluble products. Fourth grade is in anhydrous form; others are hydrated. Furnished in 350-lb. drums.

Source: Produced by Sylvania Electric Products Inc., Dept. CP, Towanda, Pa. . . or for more information check CP 9540 on handy form, pages 2 and 3.

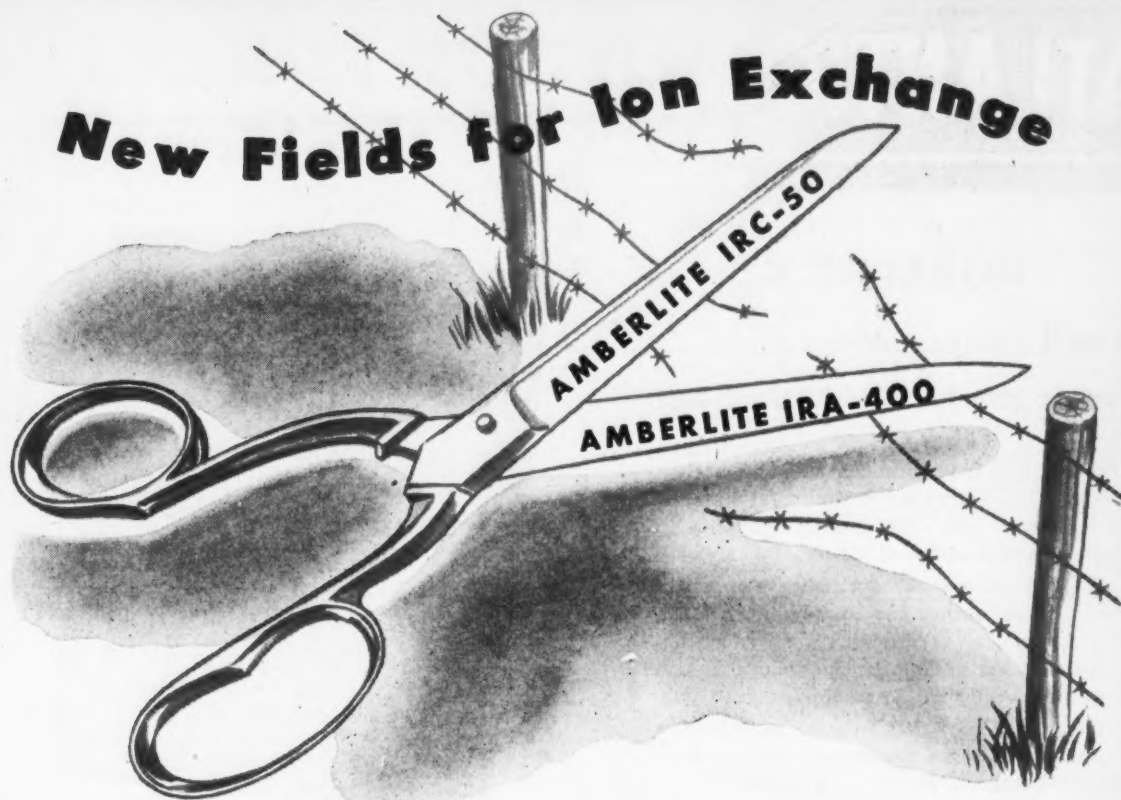
Properties, test data on nonyl alcohol esters

16-page bulletin describes properties of three typical nonyl alcohol esters and presents test data on their use in compounding typical vinyl resins.

Tech. Bul. 15, issued by Standard Oil Co. of Ind., Dept. CP, Chem. Products Dept., 910 So. Michigan Ave., Chicago 80, Illinois. When inquiring specify CP 9541 on handy form, pages 2 and 3.

For more information on product at right, specify CP 9542 . . . see information request blank between pages 2-3.

New Fields for Ion Exchange



With The New Amberlites

IRC-50—Here's AMBERLITE IRC-50, a carboxylic-acid exchanger that selects cations with a precision impossible with strong-acid adsorbents, an extremely high capacity exchanger that owes its exchange selectivity—and its broad use—to the weakly-acidic activity of its exchange groups.

It's a resin whose great avidity for hydrogen ions permits regeneration with only theoretical quantities of dilute acid, a resin that can actually be buffered to maintain any desired pH level in the effluent. This exchanger has opened new fields of concentration, isolation, and purification of antibiotics, basic amino acids, alkaloids, milk products, and other hard-to-treat materials.

Capacity? Extremely high. In alkaline media the resin will actually adsorb its own weight of quinine sulfate!

IRA-400—And here's an anion exchanger, AMBERLITE IRA-400, so strongly basic that it behaves like solid caustic with only its hydroxyl ions in solution, so basic that it will adsorb phenol, naphthenic acid, carbon dioxide, hydrogen sulfide, and silica . . . phosphates, borates, and cyanides . . . amino acids and fatty acids . . . and countless other anions that once defied effective adsorption by weak-base exchangers.

Even new operational techniques are now open to ion exchange: You can now reverse the order of deionization if the medium which you wish to treat cannot withstand a reduction in pH. Or, if no change at all in the pH of the medium is permissible, you can actually mix AMBERLITE IRA-400 with a strong-acid cation exchanger like AMBERLITE IR-120 and deionize in one container and in one operation!

CHEMICALS

FOR INDUSTRY

Write today for technical notes on the AMBERLITES IRC-50 and IRA-400.

AMBERLITE is a trade-mark, Reg. U. S. Pat. Off.

ROHM & HAAS COMPANY

THE RESINOUS PRODUCTS DIVISION

Washington Square, Philadelphia 5, Pa.

The Resinous Products Division was formerly The Resinous Products & Chemical Company

ATLANTIC

PETROLEUM CHEMICALS

ULTRAWET K

**You'll compound a
better product with Ultrawet**

Ultrawet K in flake form contains 85% active-solids. When you're dry-mixing that's important, because you have greater flexibility in the choice of alkalis and other builders.

Ultrawet K has no odor, is light cream in color; it approaches the compounder's ideal. It's economical because it's highly concentrated. Our savings in processing, shipping and storage are reflected in its low price to you.

Ultrawet K is a development of Atlantic's more than 12 years' experience in the production of detergents and wetting agents.



| ● APPLICATIONS | ● ULTRAWETS | | | | | |
|--|--------------------|--------------------|--------------------|------------|-------------|-------------|
| | 30E | 30DS | 35K | SK | DS* | K |
| | Liquid 30 85 | Liquid 30 85 | Liquid 35 90 | Bead 35 | Flake 85 | Flake 85 |
| EMULSION BREAKING | ✓ | | | | | |
| LIGHT-DUTY HOUSEHOLD DETERGENTS | | | | ✓ | | |
| PENETRANT | ✓ | ✓ | | | | |
| INDUSTRIAL DETERGENTS | | | | | ✓ | ✓ |
| HEAVY-DUTY HOUSEHOLD DETERGENTS | | | | | | ✓ |
| EMULSIFIER | | | | | ✓ | ✓ |
| WETTING AGENT | ✓ | ✓ | | | | |
| CHARGE STOCK FOR SPRAY AND DRUM DRYING | | | ✓ | | | |
| DRY MIXING WITH ALKALIS | | | | ✓ | ✓ | ✓ |
| LIQUID HOUSEHOLD DETERGENTS | | ✓ | | | | |
| COUPLING AND SOLUBILIZING | ✓ | | | | | |

*Formerly "E"

For samples, further information and quotations, communicate with

THE ATLANTIC REFINING COMPANY

Chemical Products Division

260 South Broad Street, Philadelphia 1, Pa.
Chamber of Commerce Building, Pittsburgh 19, Pa.
Hospital Trust Building, Providence 1, R. I.
1112 South Boulevard Street, Charlotte 3, N. C.
111 West Washington Street, Chicago 2, Ill.

L. H. BUTCHER COMPANY • San Francisco • Los Angeles
Seattle • Salt Lake City • Portland • Oakland

When inquiring check CP 9543 on handy form, pgs. 2-3

MATERIALS

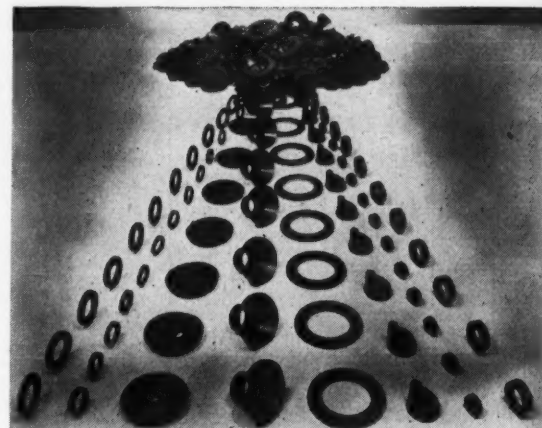
**Fabricate oil, grease-resistant
rubber gaskets, tubing,
from compounds . . .**

furnished to specification in tensile strengths from 500 to 2500 psi, 100 to 600% elongations

Uses: Oil, grease and gasoline-resistant synthetic rubber compounds for withstanding chemical action of petroleum products and their derivatives, other industrial and commercial lubricants.

For fabrication into gaskets, sleeves, washers, tubing, molded products and extruded cross-sections. Applications include fuel lines, dust covers, filters, channels, vibration dampeners, etc.

Will provide weatherproof qualities when combined with various oxident additives. Such rubbers can with-



Fabrications from synthetic rubber compounds

stand temperatures from minus 60 to plus 225°F.

Features: Long life and minimum swell under adverse conditions. Can be formulated to meet either SAE requirements or specific application needs. Economical.

Description: Buna N, Hycar or Neoprene-based. Tensile strengths from 500 to 2500 psi, durometer hardness from 40 to 90, elongations from 100 to 600% furnished to specification.

Source: Produced by The Stalwart Rubber Company, Dept. CP, 221 Northfield Rd., Bedford, O. . . or for more information check CP 9544 on handy form, pages 2 and 3.

**Modified alkyl aryl sulfonate has
emulsifying, wetting, foaming,
detergent qualities . . .**

detergent is stable and effective in acids and alkalies

Uses: As cleansing and foaming agent in preparation of liquid hair dyes, shampoos, shaving creams. As a synergist in acid and alkaline cleaning; also emulsifies oils present, and speeds rinsing time.

Other uses are in leather processing, paper making, textile scouring and dyeing.

Features: Easily perfumed and tinted. Does not separate on standing. Manufacturer reports greater hard water and lime soap resistance. Dissolved condition provides immediate foaming in warm or cold water.

Wetting, penetrating, emulsifying and detergent qualities

CHEMICAL PROCESSING Preview

AMMONIA (Refrigeration Grade)

TANK CARS and CYLINDERS

direct service
from producing
point to user avail-
able on contract
shipments or spot
orders from...



**SPENCER
CHEMICAL
COMPANY**

Executive and Sales Offices
Dwight Bldg., Kansas City 6, Mo.

CONTACT SPENCER
NOW FOR YOUR
AMMONIA NEEDS

When inquiring check CP 9545
on handy form, pgs. 2-3

MATERIALS

are reportedly high at very low concentrations; effective in presence of acids or alkalies.

Description: Clear, light amber liquid; pH 7.5 in any concentration of distilled water. Calcium tolerance is 1200 ppm. Ross Miles Foam test shows 180 to 220 cc. of foam in water of varying hardness.

Source: Produced by Ultra Chemical Works, Inc., Dept. CP, Paterson, New Jersey . . . or for more information check CP 9546 on handy form, pages 2 and 3.

Paint over priming coat after 30 minutes . . .

metal primer dries without oxidation; evaporation of solvents leaves inert film

Uses: To prime metals when it is desirable to apply finish coat without loss of time.

Features: Chromated metal primer dries by evaporation of solvents; no oxidation involved. Dries to touch in 10 minutes; can be re-coated in 30 minutes to 1 hr. under average temperature and humidity conditions, even with coatings containing strong solvents.

Description: Primer is Bakelite type coating, similar to that used on aircraft. Excellent adhesion to light metals as well as steel, resistance to moisture, salt spray and corrosive gases are reported.

In cases where scaffolding or staging is required, need for swinging a job twice is eliminated by applying two coats of paint in one day. Where steel sash is being reconditioned and merely requires glazing, primer can be applied and glazing of the sash can be done in 1 hr.

Source: Product of the Tremco Mfg. Co., Dept. CP, 8701 Kinsman Rd., Cleveland, Ohio . . . or for more information check CP 9547 on handy form, pages 2 and 3.

Floor resurfacer has greater compression strength than standard concrete . . .

laboratory tests show greater abrasion resistance, less water absorption than standard concrete

Uses: To patch and resurface concrete floors. Designed especially for use on floors subjected to heavy trucking, extreme heat, or water, oil, and grease.

Features: Tests by independent laboratories show floor resurfacer has twice the compressive strength and tensile strength, less water absorption, and much greater abrasion resistance than has standard Portland.

Description: Supplied as dry powder, water to be added. Sets in 8 hours, takes heavy trucking in 24 hours. Tests show special resistance to loss of strength under simulated dairy conditions.

Source: Produced by The Monroe Co., Inc., Dept. CP, Cleveland 6, Ohio . . . or for more information check CP 9548 on handy form, pages 2 and 3.

Properties, uses, reactions of nonyl aldehyde derivatives

6 derivatives of 3, 5, 5, trimethylhexaldehyde are described in 28-page bulletin. A summary of properties and suggested uses is included. Second section outlines tentative specifications and useful reactions.

Bul. 4 SP-99, issued by Rohm and Haas Company, Dept. CP, Philadelphia 5, Pa. When inquiring specify CP 9549 on handy form, pages 2 and 3.

these advantages of

PETROLITE *Crown Quality* **WAXES**
make them first choice
for manufacturers of
emulsion polishes

**HIGH MELTING POINT
LOW PENETRATION
COMPATIBILITY
GLOSSINESS
LOW TACK
LOW COST**

**EASE OF EMULSIFICATION
INSOLUBILITY IN THE
USUAL ORGANIC
SOLVENTS AND WATER
UNIFORMITY
PURITY**

and these
specifications

| Crown Quality Number | Melting Point °F | Penetration with 100 grams | Color N.P.A. | Acid Number | Saponification Number |
|----------------------|------------------|----------------------------|--------------|-------------|-----------------------|
| 200 | 185/190 | 10 Maximum | Brown | Nil | Nil |
| 500 | 185/190 | 10 Maximum | 2½ Maximum | Nil | Nil |
| 700 | 190/195 | 5 Maximum | 2 to 2½ | Nil | Nil |
| 1035 | 195/200 | 2 Maximum | 2 to 2½ | Nil | Nil |
| 23 | 180/185 | 6 Maximum | 4½ to 6 | 20 to 25 | 55 to 65 |
| 36 | 180/185 | 8 Maximum | 5½ to 8 | 30 to 35 | 85 to 95 |

Descriptive literature and
samples available on request.



PETROLITE *Crown Quality* **WAX**
Petrolite Corporation, Ltd. ★ WAX DIVISION
30 Broad Street, New York 4 ★ REFINERY: Box 390, Kilgore, Texas

PWT-49-2

When inquiring check CP 9550 on handy form, pgs. 2-3

EXACTLY WHAT YOU SPECIFY

PENN-DRAKE

| Specification Sheet | |
|---------------------|--|
| Viscosity | |
| Pour Point | |
| Melting Point | |
| Color | |

SPECIALIZED PETROLEUM PRODUCTS

If the petroleum base product you need is "slightly different," write your own specifications and Penn-Drake Specialized Service will follow them *exactly*.

This service can help you write specifications having the exact qualities to fill your needs. And Penn-Drake will follow through to see that you get materials that follow these specifications.



PENNSYLVANIA REFINING COMPANY

BUTLER, PENNSYLVANIA

Branches: Cleveland, Ohio and Edgewater, N. J.

Representatives in all Principal Cities

When inquiring check CP 9551 on handy form, pgs. 2-3

MATERIALS

Xylene hexafluoride available . . .

intermediate in preparation of non-flammable hydraulic fluids

Uses: *bis*-trifluoromethyl benzene has properties suggesting use as intermediate in preparation of non-flammable dielectric and hydraulic fluids; as starter in dyestuff preparation.

Features: Freezing range of -40° to -50°C ; distillation range of 113° to 117°C ; flash point of 37°C .

Description: Mixture of para and meta isomers. Clear, thin, water-white liquid. Can be nitrated and the nitro compound reduced to the amino. Available in pilot plant quantities.

Source: Produced by Hooker Electro-chemical Co., Dept. CP, Niagara Falls, N. Y. . . or for more information check CP 9552 on handy form, pages 2 and 3.

Joins dissimilar metals, buffering electrolysis between them . . .

strong, but ductile, stick solder resists 800-hr salt spray test

Uses: With suitable flux, solder will join all metals, including copper and stainless steel. Will tin aluminum.

Features: Acts as buffer to eliminate electrolysis between dissimilar metals. Resists 800-hr salt spray bath test without deteriorating. Soldered joints withstand cold water pressures to 1000 lbs. Can be machined without chunking. Will stand ordinary and chromium plating. Strong, yet ductile.

Description: All-metal solder is in stick form and is readily applied. Tests on tensile strength show it to be stronger than 50/50, but soft enough to be worked with a machinist scraper.

Source: Manufactured by Farrelloy Company, Dept. CP, 1260 N. 26th St., Philadelphia 21, Pa. . . or for more information check CP 9553 on handy form, pages 2 and 3.

Describes anhydrous ferric chloride

Anhydrous ferric chloride containing 96% FeCl_3 by weight, and an aqueous solution of the material are discussed in 12-page leaflet. Uses, characteristics included.

"Anhydrous Ferric Chloride", issued by Pennsylvania Salt Mfg. Co., Dept. CP, 1000 Widener Bldg., Philadelphia 7, Pa. When inquiring specify CP 9554 on handy form, pages 2 and 3.

FOR YOUR INFORMATION



LOW-COST PLASTICIZER now available in quantity

Santicizer* 160 is now available at reduced prices—for immediate shipment in any quantity. Since it is less expensive than any other plasticizer of comparable quality, Santicizer 160 will help you reduce compounding costs, yet maintain excellent performance characteristics.

Santicizer 160 combines many plasticizing advantages . . . It makes possible economical reductions in processing temperatures for vinyl films, sheetings, extrusions and floor tiles—lowers burning rates of these materials.

Complete information and samples of Santicizer 160 will be sent immediately upon request. Contact any District Sales Office, write or note your request on the coupon on opposite page. Ask also for your copy of "Monsanto Plasticizers," a new, comprehensive treatise on plasticizing action, applications and performance results of Monsanto plasticizers.



ADVANTAGES OF SANTICIZER 160

1. Low Cost (recent reduction makes it lowest-priced plasticizer of comparable quality).
2. Excellent Processing Action (enables lower calendaring temperature or faster rates of operation).
3. High Tear Strength.
4. Low Burning Rate (less flammable than most phthalate-type plasticizers).
5. High Tensile Strength.
6. Readily Available in Quantity.

Dependable Source of Supply

Monsanto's basic position on raw materials assures a steady supply of highest-quality plasticizers. Consult Monsanto technicians . . . They are especially qualified to assist you in any problems in this field.

SYNERGISTIC ACTION GIVES HIGH DETERGENCY AT REDUCED COST

Santomerse* No. 1 and TSPP improve efficiency of cleaning compounds, textile processing

Cleaning power of Santomerse No. 1

Cleaning power of tetrasodium pyrophosphate

Mathematical average cleaning power of Santomerse No. 1 and TSPP

Actual cleaning power of Santomerse No. 1 and TSPP delivered through Synergistic Action

A substantial bonus in detergency is available at lower cost by employing the synergistic action of two Monsanto products—Santomerse No. 1 and tetrasodium pyrophosphate. What is synergistic action? Suppose, for example, you mix Santomerse No. 1, a product of high detergency, with TSPP, having lower cleaning power, you naturally expect effectiveness that strikes an average of the two. Actually, however, the result is detergency higher than the average . . . higher than the cleaning power of either product. This co-operation of the two Monsanto products, bringing a bonus in effectiveness, is synergistic action.

Since TSPP is priced even lower than economical Santomerse No. 1, the use of the mixture lowers costs while delivering higher detergency.

Look into the possibilities of synergistic action in reducing your costs while increasing the efficiency of industrial cleaning compounds and textile cleaning and scouring operations. For details, contact the nearest Monsanto District Sales Office, write, or note your request on the coupon.

GOOD AVAILABILITY

Prompt delivery of Santomerse No. 1 or TSPP can be made from the nearest of thirteen conveniently located producing and shipping points.

News of Monsanto Chemicals for the Process Industries.....April, 1949

THESE INTERMEDIATES OFFER HELP IN YOUR DEVELOPMENT PROBLEMS

If you are looking for ways to improve your products, or to develop new ones, try the four Monsanto intermediates described here . . . They may readily help you reduce production costs, increase profits, or even open wide new business frontiers.

If your research develops uses for any of these Monsanto products, you can be sure of ample supply at reasonable prices. Samples for test purposes will be furnished promptly without charge.

para-AMINOBIIPHENYL, TECHNICAL SPECIFICATIONS

Appearance and Color: Yellowish-brown crystalline mass. **Crystallizing Point:** 50.5°C. min. (Indicates purity of 94.5% para-Aminobiphenyl min.)

ADDITIONAL PROPERTIES

Distillation Range:

First drop, 325.0°C. min.; 1-96 ml., 8.0°C. max.; 100% (First drop to dry point), 10.0°C. max.; Dry point, 340.0°C.

Specific Gravity: (60.0°C./15.5°C.) approx. 1.06

POSSIBLE APPLICATIONS

Intermediate in dyestuff synthesis; organic and pharmaceutical synthesis; synthesis of insecticides.

para-NITROBIIPHENYL SPECIFICATIONS

Appearance and Color: Brown, crystalline solid. **Crystallizing Point:** 110.0°C. min.

Composition From Vacuum Distillation:

para-isomer, 94.0% min.; ortho-isomer, 6.0% max.; High boiler, 1.0% max.

ADDITIONAL PROPERTIES

Specific Gravity: approx. 1.154

Boiling Point: approx. 340°C.

(At atmospheric pressure)

Flash Point: approx. 164°C. (Tag open cup).

Fire Point: approx. 189°C. (Tag open cup).

POSSIBLE APPLICATIONS

Intermediate in dyestuff synthesis; organic and pharmaceutical synthesis; synthesis of insecticides.

BENZYL CHLORIDE

SPECIFICATIONS: (For anhydrous liquid and material recovered from stabilized solution.)

Appearance and Color: Colorless to light-yellow liquid.

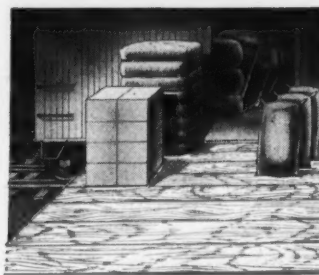
Specific Gravity: 1.104-1.108 at 15.5°/15.5°C.

Distillation Range: First drop, 177.5°C. min.; 95% (1-96 ml.), 3.0°C. max.; Dry point, 185.0°C. max.

ortho-NITROCHLOROBENZENE

SPECIFICATIONS

Appearance and Color: Greenish-yellow crystalline mass. **Crystallizing Point:** 31.7°C.



PENTA CHLOROPHENOL preservative

Santophen* 20 provides clean, long-lasting protection for all types of wood construction

Wood properly treated with Penta is CLEAN and STAYS CLEAN. It resists leaching even under conditions of high humidity or moisture; is paintable when formulated with suitable carrier oils. This non-bleeding quality of Penta is especially important where people or packaged goods come in contact with wood . . . It will not stain; has no objectionable odor.

Penta's high toxic value assures years of dependable protection against exposure, wood-rotting fungi, termites and other wood-boring insects. This toxicity never varies, since the chemical characteristics of Penta are always constant, always laboratory-controlled.

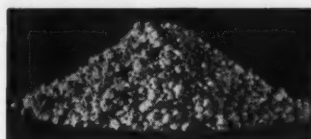
The Penta treatment, by either pressure or open-tank method, is simple. To learn more about its advantages, send for your copy of a new Monsanto folder, "Monsanto Pentachlorophenol for Preserving Wood in Industrial Construction."

Where Penta Makes Wood Last Longer

Platforms and Decking • Loading Docks • Catwalks and Railings • Ice Plants and Storage Houses • Grandstands and Stadium Buildings • Warehouses and Granaries • Tool and Machinery Sheds • Trestles and Bridges • Guardrails • Utility Poles • Signs and Billboards • Factory Flooring • Sills, Plates, Joists • Rafters and Roofing • Sash and Doors • Ladders and Stairs.

*Reg. U. S. Pat. Off.

SANTOBRITE DUSTLESS PELLETS SIMPLIFY HANDLING, STORAGE



Sodium Pentachlorophenate, Tech., has many uses as industrial preservative, fungicide, herbicide

Santobrite* is now available as pellets. Among the several advantages of this new form are: elimination of dusting, rapid solution in water, ease of handling, less storage space requirements per pound . . . The pellets are designed chiefly for the comfort of those who have found Santobrite dust bothersome. Santobrite will still be available in powder and briquette forms.

Santobrite is an industrial preservative, fungicide and herbicide with a wide range of applications, including the control of slime and algae in cooling water systems. If you are not already familiar with this and other important uses, write for full information . . . Samples for test purposes will be furnished without charge.

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MATERIALS

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Excellent electrical properties make them valuable for use in vinyl wire coatings.

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Description: These dioctyl phthalates, di-2-ethyl-hexyl phthalate and di-iso-octyl phthalate, are now in quantity production. They are known as Aero DOP and Aero DOPI, respectively.

Source: Products of American Cyanamid Company, Dept. CP, 30 Rockefeller Plaza, New York 20, N. Y. . . or for more information check CP 9555 on handy form, pages 2 and 3.

Fire-retardant paint is non-toxic . . .

no fumes while being applied or when attacked by flames

Uses: As fire-retardant paint.

Features: No smoke or toxic gases are given off either while being applied or when attacked by flames. Coated lumber can withstand 2000°F blow-torch for 30 minutes without flame spread, manufacturer reports.

Description: Oyster-white flat finish paint. Can be applied as received, with brush or spray-gun. Can be washed with soap or washing powder.

When attacked by flame, paint forms protective crust 8 times original thickness.

Source: Produced by Stallion Chemical Corp., Dept. CP, 8-14 37th Ave., Long Island City 1, N. Y. . . or for more information check CP 9556 on handy form, pages 2 and 3.

For more information on product at left, specify CP 9557 . . . see information request blank between pages 2-3.



General view of synthetic chemical department. Instrument panel for dryers is in background



Closeup of cabinet type dryers showing recording-controlling wet and dry bulb thermometers

PRODUCTION of synthetic chemicals for ingredients in pharmaceuticals constitutes a large part of plant operations at the G. D. Searle & Co., Chicago, Ill. Instrumentation carries much of the responsibility for obtaining desirable yields and safeguarding the purity of these chemicals.

Types of reactions used at Searle include methylation, chlorination, diazotization, ring closing and the Friedel-Crafts reaction. From the standpoint of reaction kinetics, these reactions must be carefully controlled as to pressure and temperature. When temperatures are too low, for example, the reaction will not go to completion, causing a low yield of the desired chemical.

On the other hand, temperatures which are too high may decompose some of the chemicals or favor formation of undesirable side reactions, again reducing yield, and contaminating product. Often it is necessary to control the rate of reaction very carefully, especially where the reaction is self-catalyzing beyond a certain critical temperature. In such cases it is necessary to instantly switch from a supply of steam to a source of cooling water.

Besides permitting desired yields of quality product, proper instrumentation prevents reactions from "running away" and becoming explosive or violent in nature.

Many of the reactions are conducted in 20 glass-enameled, steam-jacketed reactors varying from 50 to 2,000-gal capacity. Upper portions of 2 typical reactors are shown in cover picture of this issue. All vessels are equipped with agitators driven by explosion-proof motors. Because of extensive use of highly volatile and inflammable solvents, explosion-proofing of all equipment is imperative. For

Process Instrumentation Assures High Yields of Quality Pharmaceuticals at Searle

Controls temperature and pressure during variety of sensitive reactions; promotes efficient drying of hygroscopic materials

this reason, all instruments used in this area incorporate spring-wound chart drives.

Each reactor is equipped with a Brown mercury-filled indicating-recording thermometer to constantly guide the operator and furnish data for the accounting and quality control departments. To increase response, the glass-enameled wells, in which the stainless steel thermometer bulbs are inserted, are filled with mercury.

Reactors are heated with 35-psig steam. Some are connected to glass-lined condensers and vacuum pumps, frequently being used as stills. Vessels of this type are equipped with Brown recording compound pressure-vacuum gauges and with recording absolute pressure gauges which play important roles where operations are carried out at pressures below 100 mm Hg.

Effects of barometric pressure changes in these comparatively low ranges are very marked. Relatively small variations represent rather large percentages of change in the desired operating pressure. By using an absolute pressure gauge, automatically and continuously compensated for barometric pressure change, operator is guided by the exact absolute pressure in vessel and not by the difference in the pressure of vessel and that of atmosphere.

One reactor is equipped with an automatic timer, making it possible to charge it at the close of working day and have steam admitted to the vessel automatically during the early morning of the following day, so that reaction will be well started before the day shift reports for work.

This vessel is equipped with a Brown recording-thermometer pneumatic controller so that steam is admitted at rate

required to attain and maintain desired temperature. If temperature rises above a certain point, steam supply is immediately shut off.

Many of the products are in the form of filter cakes which must be dried. There are approximately 10 steam-heated cabinet type dryers in the chemical department. Temperature in each is controlled by a Brown recording thermometer with narrow proportional band pneumatic control unit. Humidity must be controlled in some dryers, where the product is quite hygroscopic. Alcohol is often used as a solvent instead of water, to minimize hygroscopic effect. A Brown wet-bulb-thermometer controller regulates a damper which governs amount of air recirculated through a humidity and temperature conditioning unit. A Brown dry-bulb-thermometer controller regulates valve on steam line to heating coil of dryer. Close control of the wet bulb temperature is important to eliminate adsorption of moisture by the hygroscopic product. Dry bulb temperature must be closely controlled to avoid decomposition.

A Honeywell thermostat, located outside building, causes steam to be admitted to an air preheating coil when outside temperature falls below 40°F, thus affording protection to main steam heating coil. A Honeywell static pressure controller on each dryer maintains a slight negative pressure in cabinet, preventing fumes from escaping into plant. In the pharmaceutical department, chemicals are compounded, according to formula, with diluents, binders and other ingredients, prior to forming into tablets or filling into ampules.

Because of the hygroscopic nature of many of the products, temperature and humidity of air in department must be closely controlled. Movement is also controlled. A rise above 40% relative humidity, for example, may cause great difficulty in operation of tablet-making machines. Air conditioning units employ activated carbon beds to remove water vapor from air.

Several integrating-recording flow meters measure all steam and water consumed by individual buildings and departments. These data are used for cost accounting purposes and periodic engineering surveys of distribution system capacities. The power plant is also completely instrumented.

Data for this article was furnished by The Brown Instrument Company, A Division of Minneapolis-Honeywell Regulator Company, Philadelphia 44, Pa.

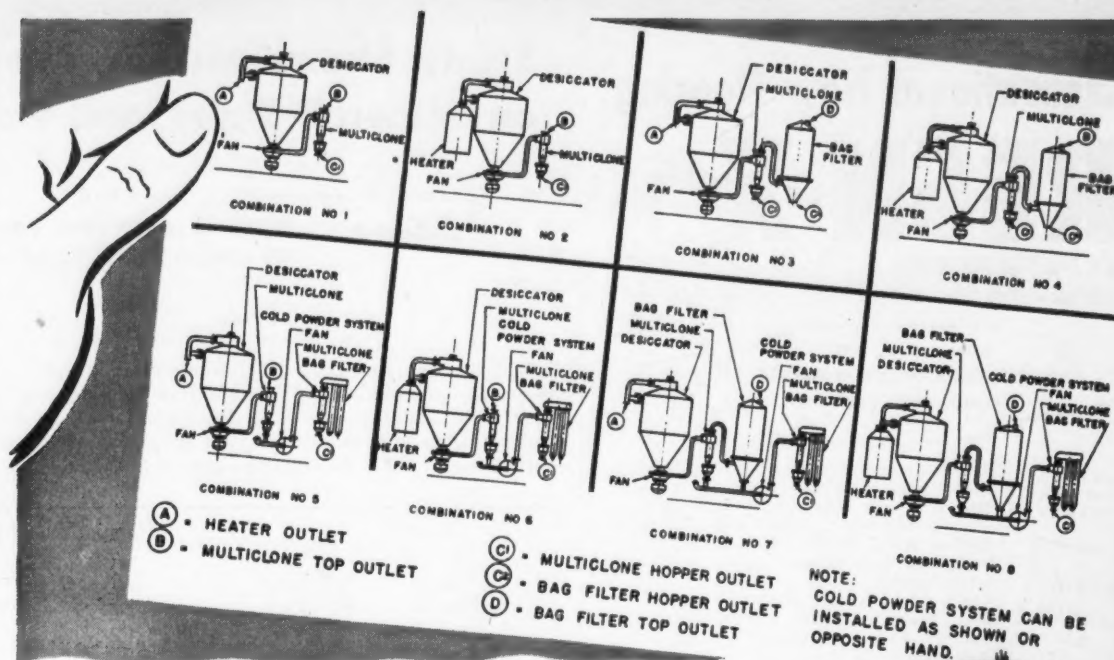
Simplify installation of cast anodes for cathodic protection . . .

package unit incorporates anode and backfill material in permeable cloth sack

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Dowell, Inc., Tulsa, Okla., sells and services these products. For a number of years this organization has served oil and gas industries with acidizing, plastic plugging and other specialized services, and the power and process industries with chemical scale removal. Some 45 offices and field stations are maintained throughout most of the oil producing and industrial areas of the country.



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Study Shows Muller Type Mixer Highly Efficient on Mineral, Dairy and Poultry Feeds

Ideas

Research group rates performance above that of ribbon type unit
for certain kinds of selected charges

THE University of Louisville Institute of Industrial Research has recently completed a series of mixing studies on dry and semi-dry materials. Instead of attacking the problem from a power-consumption standpoint, research was directed toward the determination of actual efficiency

of mixing, i.e., finding how long a period of time was needed to disperse a tracer material nearly equally throughout the mix. Tendency of mixed material to separate upon handling was also evaluated.

A number of runs were made in each of two types of

TABLE I
Comparison of Mineral Feed Results

| Run No. | Charge (Lbs) | % Tracer and Other Ingredients | RPM | Time for Complete Mixing (Min.) | Running HP ^d | HP x Min ^e 100 lbs Mix |
|-----------------------------|--------------|---|-----|---------------------------------|-------------------------|-----------------------------------|
| M ₁ ^a | 500 | 0.09% KI | 39 | 1 1/2 | 4.1 | 1.2 |
| R ₁ ^a | 400 | | 35 | (Indefinite) ^c | 1.5 | — |
| M ₂ | 500 | 0.90% KI | 39 | 1 1/2-2 | 4.1 | 1.2 - 1.6 |
| R ₂ | 400 | | 35 | (Indefinite) ^c | 1.5 | — |
| M ₃ | 500 | 0.09% KI; 8% Molasses Added at 140° F. ^b | 30 | 1/2-1 | — | — |
| R ₃ | 400 | | 35 | (Indefinite) ^c | 4.5 | — |

^a M denotes mix made in muller; R is similar mix made in ribbon mixer.

^b 0.40% MnSO₄ was added to muller mix only.

^c Analytical results indicated that it was doubtful if mixing would ever reach completion (where all samples are within 0.1% of calculated value). It was noted that an inactive layer about 1" thick existed around sides of mixer. A

duplicating run, in which more samples were taken, showed that samples varied widely as to tracer content even after 2 hrs. of mixing.

^d Running HP of empty muller mixer was 2.1; of empty ribbon mixer, 1.3.

^e This figure obtained by multiplying running HP by minutes required for complete mixing, and dividing the sum by weight of batch in hundreds of pounds.

TABLE II
Comparison of Dairy Feed Results

| Run No. | Charge (Lbs) | % Tracer and Other Ingredients | RPM | Time for Complete Mixing (Min.) | Running HP | HP x Min 100 lbs Mix |
|----------------|--------------|--------------------------------------|-----|---------------------------------|------------|----------------------|
| M ₄ | 190 | 1% NaCl | 25 | 1 | 3.6 | 1.9 |
| R ₄ | 100 | | 35 | (Indefinite) ^a | 1.3 | — |
| M ₅ | 175 | 1% NaCl; 5% Molasses Added at 140°F. | 42 | 1 1/2 | 4.8 | 4.1 |
| R ₅ | 100 | | 35 | 6 | 1.3 | 7.8 |

Same nomenclature is used as on Table I.

^a Analytical results were uniformly too high after 6 min. mixing, showing that mixing was not at all complete. As

with limestone, an inactive layer formed against sides, although the tendency in this case was not as pronounced.

TABLE III
Comparison of Poultry Feed Results

| Run No. | Charge (Lbs) | % Tracer and Other Ingredients | RPM | Time for Complete Mixing (Min.) | Running HP | HP x Min 100 lbs Mix |
|-----------------------------|--------------|---|-----|---------------------------------|------------|----------------------|
| M ₆ | 200 | 1% NaCl | 39 | 2 | 4.1 | 4.1 |
| R ₆ | 100 | | 35 | (Indefinite) ^b | 1.3 | — |
| M ₇ | 200 | 1% NaCl; 1% Molasses Added at 140°F. | 39 | (Indefinite) ^c | 3.1 | — |
| R ₇ | 100 | | 35 | 6 | 1.5 | 9.0 |
| M ₈ | 200 | 1% NaCl; 1% Condensed Fish Solubles Added at 140°F. | 39 | 3 | 3.1 | 4.6 |
| R ₈ | 100 | | 35 | 6 | 1.3 | 7.8 |
| M ₉ ^a | 200 | 1% NaCl | 39 | 1 | 4.0 | 2.0 |

Same nomenclature as used on Table I.

^a In this run, 4 lead billets were placed on each muller to increase their weight 200 lbs.

^b High analytical results showed mixing not complete after 6 min.

^c At end of run it was found that not all of the molasses-NaCl mixture had been added. Analysis at end of 12 min. mixing showed samples to be within 0.01% of each other but, of course, lower than calculated amount.

mixers. One was a muller type (Model 1-H Simpson Intensive Mixer) and the other was a horizontal double ribbon type similar to the kind customarily used for blending mixed feeds. A Reeves variable-speed drive was used on each of the units.

Simple feed formulas (livestock, poultry, etc.) were used. These were selected to provide the general mixing characteristics typical of complete formulas. The ingredients were those commonly incorporated in feed formulas. They were selected as providing mixtures representing a variety of mixing problems.

Grain was represented by corn, protein was represented by soybean and cottonseed meal, and molasses and condensed fish solubles represented liquids added to some of the runs. Mineral types of feed were represented by limestone.

Tracer element employed with limestone mixes was potassium iodide coated with calcium stearate (90% potassium iodide—10% calcium stearate). With the other feeds, finely ground sodium chloride was used.

Materials were weighed out and dumped into mixer for each run. When no liquids were added, the carefully weighed tracer was dumped in after the other ingredients, mixer was started, and timing commenced immediately. When a liquid was added, the tracer was dissolved in it, and the solution was added to the rest of the ingredients in the running mixer. Timing of run was started after all the liquid had been added.

In cases where all the tracer would not dissolve in the liquid, some was dumped in dry and the rest was dissolved, being added as above. Time required for the liquid to run in was measured.

Preliminary experiments set batch size in muller type mixer at 500 lbs of limestone and 200 lbs of feed. These amounts corresponded with manufacturer's rated capacity for mixer. One run was made to determine the maximum amount of limestone that could be mixed at minimum rpm. This was found to be 1300 lbs at 12½ rpm. In operating the ribbon mixer, amount of material per batch was specified as that required to cover axle by about 1 inch.

Samples were taken at stated intervals of time. Mixer was stopped, samples taken, and mixer was re-started. At each time interval, 2 samples were taken from each of 4 specific locations in the muller type mixer, or from each of 3 specific locations in the ribbon mixer. One of the two samples was analyzed for tracer content and the other was held in reserve for checking purposes. Mixing was assumed to be complete for all practical purposes when analytical results on the different samples were within plus-or-minus 0.1% of the known percentage of tracer in the mix.

One sampling location in the muller mixer was at the bottom and under one of the mullers; a second was along the center shaft, about 1/3 the distance up from bottom, and on opposite side of shaft from the first sample. A third location was near the top level of the mix, about half way between center shaft and side, and on same side of mixer as second sample. Fourth sample was taken from bottom, directly across mixer from first sample.

The 3 sampling locations in the ribbon mixer were: at loading end, directly over axle, at top of batch; at discharge end, directly over axle, at top of batch; and along curved side of mixer, about 1/3 of the distance up from bottom, midway between ends of mixer.

The tables are self-explanatory. It will be noted that the muller type mixer mixed feeds completely in relatively short periods of time. The intensive kneading, smearing and rubbing of this type of mixer appears to be highly effective.

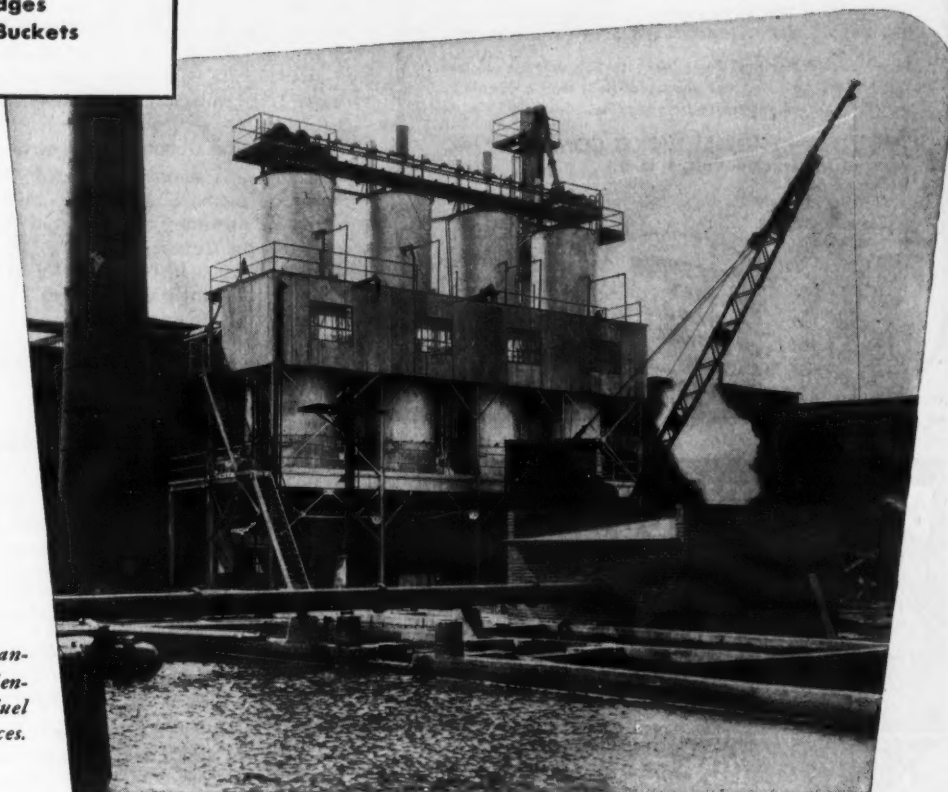
(Continued on page 34)

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Page 34

IDEAS

(Concluded from page 33)

The dry dairy feed from each mixer was used in testing segregation tendencies. This material is somewhat coarse and offers good possibilities for the Sodium Chloride tracer to sift down through it upon shaking. The Ro-Tap soil analyzer was employed. This apparatus produces a tapping motion in the vertical plane, with uniform circular motion in the horizontal plane.

Seven circular gravel screens with square holes were placed in unit. From top to bottom, the openings were 3, 2, 1½, ¾, ½, ⅜" square. The nest of screens was filled with feed until top screen was full. The same weight was used in each run.

After running for 5 min, a sample was taken from pan at bottom and analyzed for Sodium Chloride. The feed mixed with the muller type mixer showed an enrichment in bottom portion of about 10.9% as compared to the original. The enrichment was about 22.7% in the case of the feed mixed in the ribbon mixer. This indicates that there was somewhat more tendency for segregation of the salt in the ribbon mixer batch.

This article is summarized from "Mixing Studies on the Simpson Intensive Mixer," published by University of Louisville Institute of Industrial Research, for National Engineering Company, Dept. CP, 549 W. Washington Blvd., Chicago, Ill. . . . or for more information check CP 9563 on handy form, pages 2 and 3.

A new technique of infrared absorption spectrometry . . .

permits use of water as a solvent; method involves use of heavy hydrogen

A new technique of infrared absorption spectrometry, which permits the use of water as a solvent was described by Dr. R. Bowling Barnes, research director of American Optical Company, in a lecture before the Louisiana State University Symposium, held in Baton Rouge, March 2-5.

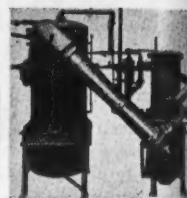
The technique involves the use of heavy hydrogen, which shifts the water vapor band away from the portion of the spectrum under investigation. Details of this method are to be published in the near future.

"The infrared spectrum of a given organic compound may be used to characterize the particular compound in question," Dr. Barnes pointed out. "It is one of the most truly unique of the physical constants, and as such it serves well as a 'fingerprint.' In contradistinction to many other physical properties, the infrared spectrum of a mixture of two compounds, A and B, does not lie somewhere between A and B, but consists of a direct superposition of the spectrum of A plus the spectrum of B. This is true for a mixture of any number of components, provided the components exist individually and do not exhibit any physical or chemical interactions among themselves. Thus, the infrared spectrum of a mixture may be used for purposes both of qualitative and quantitative analyses."

Such a spectrum, as generally presented, is a plot of percent transmittance as ordinates versus the wave lengths (in microns) or the frequency (in cm. — 1 = 1.104), as abscissas. The latter furnish the data for qualitative analyses, whereas the former supply the information needed for making a quantitative analysis.

Early during the past war, the obtaining of very rapid analyses of gas streams for their content of iso- and n-butane became extremely urgent. The fact that this and many other critical analyses could be performed by in-

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When inquiring check CP 9565 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

frared methods in a manner of minutes caused instrument manufacturers to consider the production of relatively small and inexpensive spectrometers. Several are now on the market and others are to follow. According to Dr. Barnes, the infrared method is applicable to materials in the solid, liquid, or gaseous state; requires a very small sample which is neither destroyed nor damaged during the analysis; is generally far less time consuming than conventional methods; and may frequently be rendered automatic or used for purposes of control. Depending as it does upon the changes of electric moment which accompany certain of the vibrations of the atoms within the molecule, an infrared absorption spectrum may be used either to characterize structurally or to "fingerprint" a molecule, to detect the presence or absence of certain specific reactive groups within the molecule, or to serve as a basis for qualitative or quantitative analyses.

Special truck will carry instrument demonstration coast-to-coast . . .

presentation includes units in actual operation and many cut-away models

Mason-Neilan Regulator Company's new demonstrator truck started on a tour of the Southern States in January. The tour will proceed to Southwestern and Pacific Coast States, returning east via the Rocky Mountain and Central States, and terminate the tour in New England. The Demonstrator presents a cross-section of the Company's control equipment, including latest developments. An air compressor is an integral part of the Demonstrator truck's facilities. This permits much of the equipment to be in actual operation and the effectiveness of the demonstration is enhanced by the use of cut-away models.

The Demonstrator is constructed with two side panels which swing out to a right angle position and together with the rear section, form a display over twenty feet wide. Fluorescent lighting is included for indoor and night-time demonstrations. To exhibit equipment effectively and to give continuity to demonstrations to large groups, a modern public address system is provided.

The Demonstrator will present pressure regulating valves, air-operated diaphragm control valves featuring percentage flow characteristics; control valve positioners; pneumatic pressure switches; pressure and temperature controlling instruments, both indicating and recording. One display of particular interest is a displacement type level controller with transparent calibrated displacer chamber, which can be operated to illustrate such control terms as proportional band, offset, deviation, etc.

Among new developments to be shown are a pressure controller (No. 2700) for valve or wall mounting which features leaf-spring feedback for exact linear proportionality; No. 12000-40 level switch, torque tube actuated, with explosion-proof micro-switches for two position level indications; No. 12600-20 level controller with separate pneumatic transmission mechanism; No. 0600 level pilot for adaptation to problems requiring level measurements by ball float; 7400 series control valve positioner and motion transmitter with special display of component parts. A unique feature of the demonstrator is the inclusion of large size charts detailing air circuits of the various controllers, thus permitting complete discussion of operating principles.

The Mason-Neilan field Demonstrator is in charge of Mr. James J. Hourihan, Jr., assisted by Mr. John R. Redgrave, both factory trained engineers. (Mason-Neilan Regulator Co., Boston 24, Mass.)

APRIL, 1949

Why that smile on Joe?

Joe may not know much about the engineered strength of WeldELLS, or the metallurgical control, or the greater scope of the WeldELL line. However, it is plain enough that these considerations which mean so much to you begin to lose meaning unless Joe does *his* part of the job right.

That's why we designed WeldELLS, not only for you, but also for Joe. That's why Joe smiles: A good Welder like Joe takes extra pride in the kind of job he can turn out when it's made easy for him by these easily identified fittings, with sized end tangents, cleanly machined bevels, precision quarter markings to speed lining up, accurate key dimensions, plus other conveniences that are combined only in WeldELLS.

Yes, Joe does a better job with WeldELLS . . . and in the final analysis, *your* work rests on Joe's work!

Remember that the line which offers the most to both you and Joe, also contains the most complete range of sizes, thicknesses, and types of fittings, *and* in a complete range of materials. Convenient stocks are carried in all industrial centers.

Note these features that appeal to the man on the job:

No guess-work; markings clear and complete.

Precision quarter marks mean a lot to the welder.

Extreme accuracy, uniformly maintained.

Sized end tangents.

Cleanly machined bevels.

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TAYLOR FORGE & PIPE WORKS General Offices & Works: Chicago 90, Ill. (P.O. Box 485). Eastern Plant: Carnegie, Pa. Western Plant: Fontana, Calif. • District Offices—New York: 50 Church Street • Philadelphia: Broad Street Station Bldg. • Pittsburgh: First National Bank Bldg. • Chicago District Sales: 208 S. LaSalle Street • Houston: City National Bank Bldg. • Los Angeles: Subway Terminal Bldg.

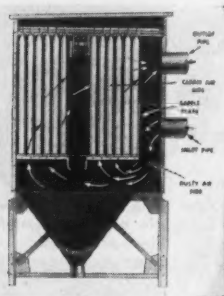
- ☐ Put my name on your mailing list to receive informative literature.
- ☐ Who is my nearest Taylor Forge Distributor? (If the information you need goes beyond the return of this coupon, please write us fully. You will receive a prompt and detailed reply.)

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Company.....
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City..... Zone..... State.....

515-0449 Mail to Taylor Forge & Pipe Works, P.O. Box 485, Chicago 90, Ill.

When inquiring check CP 9566 on handy form, pgs. 2-3

Simple DUSTUBE Design Means Efficient Economical Dust Control



Cross-section view of Dustube showing simplicity of design. Tubes are installed by one man without tools. Tubes are compact, light, and occupy little space. Inspection is from the clean air side. Tube condition can be determined without removing any part.

Dustube efficiency by weight 98% and more; by dust count: discharged air shows less than 10 million particles 2 to 10 microns in size per cubic foot. **Economy:** Cost is confined to power for operating fan and shaker and occasional replacement of inexpensive cloth tube. **Dependability:** tubes never under tension—no metal contacts to rust or abrade cloth. Result: little wear, long life.

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American
WHEELABRATOR & EQUIPMENT CORP.
(FORMERLY AMERICAN FOUNDRY EQUIPMENT CO.)
478 S Byrkit St., Mishawaka 12, Indiana

dustube
DUST COLLECTORS

When inquiring check CP 9567 on handy form, pgs. 2-3

WORK in Comfort

WITH

CHELSEA FANS

Comfort Cool Your Plant—Remove
Excessive Heat, Fumes, Steam and Vapors

| | | |
|--|---|--|
|  <p>IND — Exhaust Fan for moving large volumes of air. Five blade, belt drive. Sizes 24 to 60 inches.</p> |  <p>PH — Roof Ventilator a complete weather-tight unit. Nothing more to buy — easy to install. Belt drive. Sizes 24 to 60 inches.</p> |  <p>BB — All purpose Fan for continuous operation in moving large volumes of air. Direct drive. Sizes 12 to 30 inches.</p> |
|  <p>AA — Utility Fan for equalizing heat or cold. Direct drive. Guard — front and back. Sizes 20 to 24 inches.</p> |  <p>DXB — Booster Fan for installation into duct line for removing fumes and heat. Belt drive. Sizes 16 to 36 inches.</p> |  <p>DUB — Heavy Duty General Exhauster. Screened. Portable, for over all shop use. Sizes 18 to 30 inches.</p> |

Explosion proof motors with non-sparking blades available for all popular sizes. Write Dept. C-1 for industrial bulletin No. 864 describing fan applications, fan uses and other pertinent information, and for catalog on Industrial Fans. Charter member of the PROPELLER FAN MANUFACTURERS' ASSOCIATION.

CHELSEA FAN & BLOWER CO., INC.

1206 GROVE STREET, IRVINGTON, NEW JERSEY

When inquiring check CP 9568 on handy form, pgs. 2-3

IDEAS

Apply anti-rust paint over rust layer

Anti-rust paint can be applied over rust; penetrates rust layer and incorporates rust particles into paint layer, it is reported. Folder states paint is unaffected by mild acids, alkalis, sulfur; can be used under water.

Pocket-size Bul. 1002-A is issued by Speco, Inc., Dept. CP, 7308 Associate Ave., Cleveland 9, Ohio. When inquiring specify CP 9569 on handy form, pages 2 and 3.

Dry cleaning detergent formula suitable in all equipment . . .

better penetration, fewer re-runs, less after-spotting among advantages

"Ovaldene" is a dry-cleaning detergent developed by the Du Pont Company after several years of research directed to finding a formula suitable in all types of dry-cleaning equipment. The new product is a balanced detergent, compounded for systems using either synthetic or petroleum solvents.

Tests under actual service conditions indicate that the detergent removes soil thoroughly and quickly at low cost. It is also excellent for preliminary cleaning of spots on textiles.

Search for a satisfactory detergent for the dry-cleaning trade began in the laboratory four years ago. The research led to the selection of a new type of synthetic detergent as the basic ingredient. Then the problem became one of embodying this highly effective agent in a suitable form for a dry-cleaning assistant. By the end of 1945, a satisfactory formula including active ingredients and stabilizers had been devised on the basis of numerous laboratory tests.

Next, tests under actual dry-cleaning conditions were undertaken in many dry-cleaning plants where both synthetic and petroleum solvents were in use. Results were more than gratifying. Not only were garments brighter in color, with a better "feel" or "hand", but spotting and wet washing were sharply reduced.

Advantages of the new detergent include: quicker and more thorough penetration of clothing by the cleaning solvent; fewer re-runs, less after-spotting and wet washing, resulting in appreciable savings; greater economy of detergents, ten pounds of clothing requiring but one ounce of "Ovaldene" dry cleaning detergent; improved luster, life and "hand", reduced water requirements for removal of water-soluble stains.

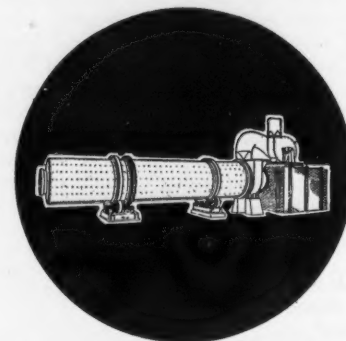
The detergent causes no foaming in the still; no filter pressures are built-up by it. It has no after-odors, there is no redistribution of soil; it does not corrode filter screens or equipment; leaves no undesirable residue; and is harmless to fabrics and colors. (E. I. du Pont de Nemours and Company (Inc.) — Electrochemicals Department — Wilmington, Del.)

Prevent scale formation in low pressure evaporators chemically . . .

units receiving treatment produce continuously over their rated capacity

Use of salt water evaporators on shipboard has been hampered by formation of hard scale necessitating shut-downs for cleaning. A recently-announced, effective

Ruggles-Coles DRYERS for Every Application



Double and single-shell rotary dryers in nine distinct types — designed for direct, indirect, and steam heat. Modifications of standard designs for peculiar drying problems. Write for Bulletin 16-C-13; state pertinent details of your problem.

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When inquiring check CP 9570 on handy form, pgs. 2-3

MARLEY NOZZLES

3 Ways to Perfect Spray

Atomizing Nozzle for any service requiring a mist-like spray

Two-Piece Nozzle is easily cleaned without removal from piping

One-Piece Nozzle . . . for maximum uniform output at lowest pressure

Write for Marley Nozzle Bulletins

MARLEY NOZZLES

THE MARLEY COMPANY, INC. • KANSAS CITY 15, KANSAS

When inquiring check CP 9571 on handy form, pgs. 2-3

chemical treatment for scale prevention offers a solution. The chemical approach to the problem centers around "Hagan LP Evaporator Compound". This has proved so effective that twin-effect evaporators, continuously treated at the rate of seven pounds of chemical material to each 325 tons of sea water, produced continuously at far over the rated capacity in exhaustive shipboard trials.

As a result of data compiled on low-pressure evaporators by the consulting chemists — Bull & Roberts, Inc., in a total of twelve voyages by vessels, similar trials are being made of a modified chemical material for use in the smaller, high-pressure fresh-water evaporators in general use aboard nearly all the American Merchant Fleet.

Early in the war, Navy tests showed that continuous injection of dilute corn starch solution would reduce scale formation to a marked degree, if carefully controlled procedures were followed. However, starch solutions tended to settle out, plugging lines and valves.

In 1945 under the direction of Dr. R. W. Liddell of Hall Laboratories, an exhaustive research program got under way to find chemical means of assuring scale-free operation of low-pressure evaporators at full "clean-tube" rating, with the undesirable characteristics of starch-phosphate mixtures eliminated. Using the new material (Hall MTS), evaporators produced above 100 percent rated capacity on three voyages. Operation was scale-free as long as treatment was continuous. Results were not conclusive, however, because rapid changes in operating personnel made consistent results almost impossible.

One distinct step forward was a minor change in the mixture to assure stable, non-segregating treatment solutions. After final modification the mixture underwent broadened trials as "Hagan LP".

Extensive tests were made in which some of the ships involved employed treatment with glassy phosphate and corn starch mixture for comparative purposes. After eighteen months of such treatment, one ship showed no scale formation. When the ship began using "Hagan LP", foaming was eliminated; and effects remained scale-free even when treatment was cut to half that originally calculated. Production was not increased appreciably, probably because higher brine levels made possible by the anti-foaming quality of the new compound were not attempted.

Numerous tests on several ships achieved large increases in production with all temperatures and pressures held to design specifications.

While it was concluded that no true evaporator demand for steam could be fixed because of other steam-demand variables, the inference was that high brine levels, and scale-free tubes, resulting in efficient use of steam heat in producing product vapor, could be credited with higher productive performance of the units.

From the personnel standpoint it offers freedom from the work of acid cleaning and chipping of evaporator units. (Calgon, Inc., Hagan Bldg., Pittsburgh, Pa.)

Lists line of lab. ovens, furnaces, incubators

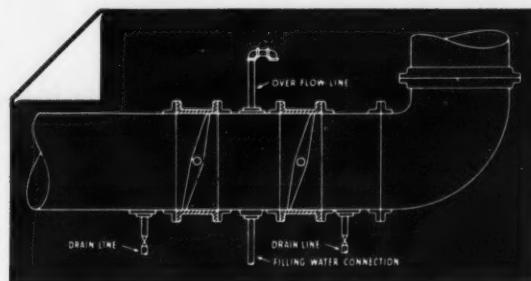
A series of 1-page sheets describes small precision laboratory furnaces and ovens with automatic temperature control, and laboratory incubators featuring 1°C accuracy throughout chamber. Specifications included.

Issued by K. H. Huppert Co., Dept. CP, 6864 Cottage Grove Ave., Chicago 37, Illinois. When inquiring specify CP 9572 on handy form, pages 2 and 3.

R-S valve Events

• EXCERPTS FROM THE R-S BOOK OF EXPERIENCE •

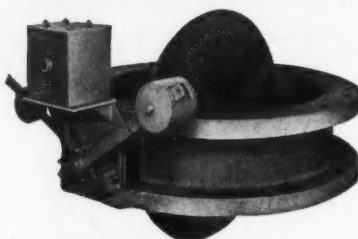
How to Seal a Gas Line



The sealing of gas lines is required in many plants as a protective measure. It is advantageous to adapt the method sketched above because of its low cost, positive seal and the fact that it requires minimum space in the line.

When the gas is to be shut off, the two R-S Valves are closed and the space between filled with water or other material, thus forming a tight seal.

Immediate Shut-Off or Vent

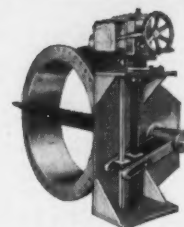


No. 628. Should solenoid operator function, the R-S Valve installed in a line either closes or opens immediately.

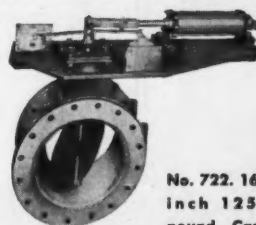
The R-S Solenoid Trip Valve is used for emergency service. The solenoid can be arranged with the counterweight mechanism to open or close the valve and hold it there in one position or the other. If for any reason the solenoid functions, the latch is tripped, which permits the counterweight to open or close the valve by gravity. The assembly is suited to shut off the flow or to open a vent and requires manual reset. Can be constructed of any metal or alloy and in various sizes for air, gases, steam, oil, water and other services. Types 649 and 696 are spring loaded (spring utilized instead of counterweight). Very popular for marine service.

Write for catalog No. 17 or consult with the R-S representative in your locality. You will find the address and phone number listed under "R-S Products Corporation, Valves."

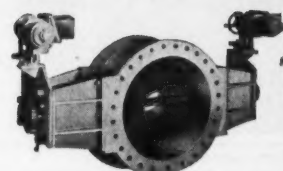
R-S Products Corporation, Wayne Junction, Philadelphia 44, Pa.



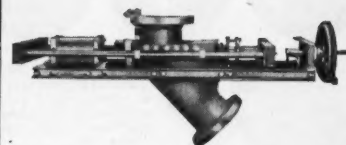
No. 728. 54-inch 50-pound Iron Valve for water service. Extremely rugged construction. Limit torque electric motor drive with threaded reach rod moves valve very slowly to prevent water hammer.



No. 722. 16-inch 125-pound Cast Iron Valve equipped with rubber spool for positive shut-off. Air Cylinder operated. Position of valve vane indicated by operating lights.



No. 725. 36-inch by 8-inch 150-pound Class B Alloy Steel Dual Valve. Controls high pressure drop and small volume or low pressure drop and large volume.



No. 719. 12-inch Steel Angle Slide Valve with 300-pound American Standard raised face flanges. Air cylinder and rising stem hand wheel operator with declutching unit. Controls liquids, gases and solids including catalysts.

When inquiring check CP 9573 on handy form, pgs. 2-3

Specimen Testing - lbs. to 160,000 psi

**TENSILE
SHEAR
TRANSVERSE
COMPRESSION**



● Seven testing ranges, all quickly, easily interchangeable for tensile, compression, transverse and shear. So simple anyone can operate. Works equally well on round, flat or special shapes of any material. Standard equipment includes one Dillon Dynamometer, (interchangeable with other six for capacity), and self-aligning, interchangeable grips. Either motor driven or hand operated. Each Dillon Tester is individually calibrated with elastic proving ring—accuracy within less than 2% guaranteed. Not injured by overload. Dillon Testers are built for hard, daily use—stay dependable, precise. Use coupon below for detailed bulletin.

DILLON

Model "L"
Universal Tester

Available
In capacities from 0-250 lbs. up to 0-10,000 lbs.

W. C. DILLON & CO., INC.
PRECISION INSTRUMENTS FOR PRECISION TESTING
Complete catalog sent on request



IT'S FOR YOU... FREE TENSILE STRENGTH COMPUTER that tells in seconds the tension at which round or rectangular specimens will break. Complete information on Dillon multi-low-range Universal Tester sent along, too.

W. C. DILLON & CO., INC.
5410-A W. Harrison St., Chicago 44, Illinois
Please send me at once, your FREE Tensile Strength Computer and Complete information on the Dillon Tester.
Company Name
Individual
Address
City Zone State

When inquiring check CP 9574 on handy form, pgs. 2-3

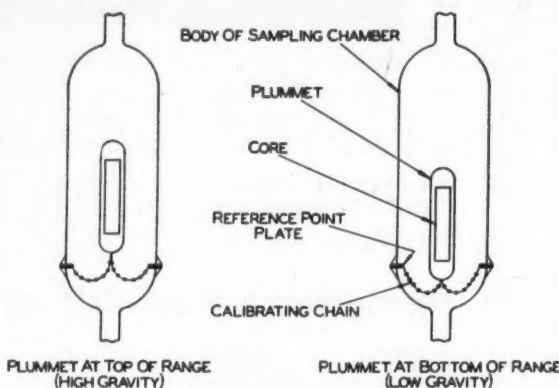
Determines Density of Flowing Liquids

Chain-plummet assembly assumes definite equilibrium position for any density within range

Uses: To determine density of flowing liquids.

Features: Accuracy of plus-minus .0002 to plus-minus .0015 d., depending on range. Sensitivity of plus-minus .00005 d. to plus-minus .0005 d., depending on range. Unaffected by vibration.

Description: Totally submerged plummet is fastened



by chain to fixed reference point. Plummet is weighted so that, at middle of indicating range, it supports half the weight of the chain. If density of liquid increases, plummet buoyancy increases and plummet rises until added weight of chain equals increased buoyancy. Changes of position are translated into chart or scale indication by inductance pickup of differential transformer.

Available in following standard ranges within density limits as shown:

| Range, d. | Density limits |
|-----------|----------------|
| .05 | .8 to 3.5 |
| .02 | .6 to 3.5 |
| .01 | .6 to 3.5 |
| .005 | .6 to 3.5 |

Any calibration will be furnished, in any scale, within overall limits of 0.10 to 0.005 d. full scale.

Any instrument form can be used with interchangeable chain-plummet-reference point assemblies to permit use of one instrument at various ranges. Temperature compensation and temperature correction elements available.

Source: Produced by Precision Thermometer and Instrument Co., Dept. CP, 1434 Brandywine St., Philadelphia 30, Pa. . . or for more information check CP 9575 on handy form, pages 2 and 3.

Warns when smoke densities near ordinance limit . . .

photoelectric smoke indicator has sensitivity setting; can be connected to indicate, record continuously

Uses: Indicates density of smoke passing through flue or breaching of heating or power plant, and signals when density approaches values prescribed by municipal smoke ordinances. Designed for average size power plant.

Features: Sensitivity adjustment permits setting of signal to sound at various maximum smoke densities over wide range. Thus, the unit can be adapted to requirements in any municipality. Reliable, rugged, simple to install.

Description: Type A2OC-1 photoelectric smoke indicator consists of photoelectric control and light source. These are mounted on opposite sides of flue, light source being projected across flue onto control.

Supplementary equipment available includes bell alarms to signal excessive smoke, densimeters to give continuous indications of smoke density, and recorders to record the time of day vs. smoke conditions at that time.

Operates from 115 volts, 60 cycles AC. Output connections those of single-pole, double-throw relay. Contacts rated 10 amp, 115 volts, 50/60 cycles AC non-inductive;

5 amp, 230 volts, 50/60 cycles AC non-inductive. 125 VA 300 volts or less. 50/60 cycle inductive pilot duty 1/8 HP 115/230 VAC 50/60 cycles. Unit weighs 6 1/4 lbs.

Source: Product of Photoswitch, Inc., Dept. CP, 77 Broadway, Cambridge 42, Mass. . . or for more information check CP 9576 on handy form, pages 2 and 3.

Control pH under constant or varying rate conditions . . .

two pH control systems are designed to meet requirements of varying conditions

Uses: To control pH under continuous operating conditions.

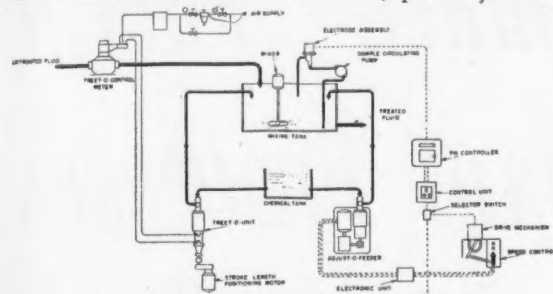
Features: Simplified pH control system designed for use when untreated fluid flow does not vary more than approximately 10%. Governed only by changes of pH in untreated fluid.

Where flow of untreated material is subject to greater variation, more complex controlling system takes both pH changes and flow rate changes into account.

Description: For steady flow conditions constant rate chemical feeding pump is utilized, as illustrated by right half of diagram. Sample circulating pump sends repre-

sentative sample of untreated fluid through electrode assembly, which signals pH values to pH controller. Controller amplifies signal and actuates driving mechanism through control unit.

For less stable conditions a meter is installed in input line to measure rate of flow. Pilot valve, paced by meter,



Combined flow diagrams of pH control systems controls proportioning pump so that number of injections of corrective chemical per minute remains proportional to rate of flow.

Sample circulating pump and electrode assembly function as in other system. pH controller and control unit vary size of corrective injections, as required by pH changes in untreated fluid.

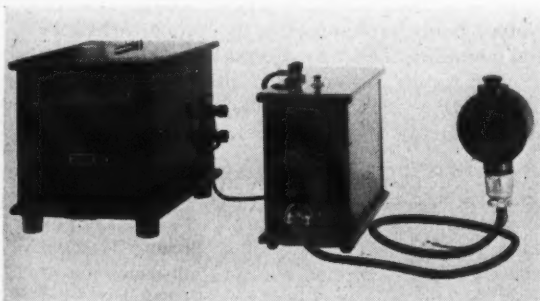
Source: Produced by % Proportioners, Inc. %, Dept. CP, Providence 1, Rhode Island. . . or for more information check CP 9577 on handy form, pages 2 and 3.

High sensitivity feature of 3-unit photometer . . .

photomultiplier tubes serve as detectors in measuring low intensities of ultraviolet or visible light

Uses: Photometer is used in colorimetric analyses.

Features: Measures very low light intensities; has optimum characteristics in ultraviolet or visible region of spectrum. Has broad application in photometric field. Photomultiplier tubes affording high sensitivities are used



High-sensitivity photometer

as detectors, obviating need for additional amplifiers. Selective wide range of sensitivity; linear response.

Description: Comprised of 3 units: (1) detector, (2) power supply and controls and (3) galvanometer. This arrangement makes it convenient to use directly or to attach photometer to various instruments.

Compact, simple-to-operate instrument has dark-current balance control and constant voltage. Battery power supply is stable, and photomultiplier tubes are interchangeable.

Source: The electron multiplier photometer is a development of Farrand Optical Company, Inc., Dept. CP, 4401 Bronx Blvd., New York 66, N. Y. . . or for more information check CP 9578 on handy form, pages 2 and 3.

an *h* "reason why".



designed to fit a particular problem

h Armored Rotameters . . .

Are especially designed . . .
To fit a requirement . . .
Solve a problem.

They measure the rate-of-flow . . .

Of liquids under very high pressures . . .
And hazardous fluids . . .
Clear or opaque.

An *h* Armored Rotameter . . .

Is just one example . . .
Of a rotameter designed . . .
For a particular purpose.

There are other *h* Rotameters . . .

For use with corrosive fluids . . .
For reducing effect of viscosity changes . . .
For use in food and dairy industries . . .
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And other uses.

Send, today, for Bulletin 18-R . . .

And the solution to *your* metering problem.

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Manufacturing Engineers

1173 THOMPSON STREET, PHILADELPHIA 22, PA.

JET APPARATUS • CONDENSERS AND VACUUM PUMPS • HEAT TRANSFER EQUIPMENT
VALVES • ROTAMETERS AND FLOW INDICATORS • GEAR PUMPS • STRAINERS
OIL BURNING EQUIPMENT • SPRAY NOZZLES AND ATOMIZERS • RADIATION TUBES

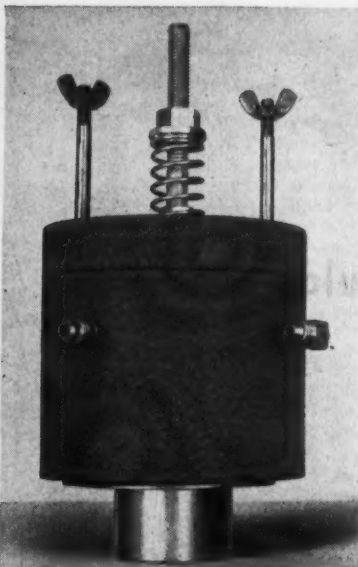
When inquiring check CP 9579 on handy form, pgs. 2-3

**Measurement of 0 to 10-lb loads
accurate to 0.5% of reading . . .**

air cells now available in low ranges to aid testing of plastics, textiles, cord, paper, other materials

Uses: Measure small loads in tension or compression. Designed for use on testing machines, of any type or capacity, for plastics, textiles, cord, paper, etc. Can be used independently for weighing chemicals or controlling processes.

Features: Load ranges of the two cells are 0-1.3 to 0-6 lbs and 0-2 to 0-10 lbs in tension and compression. Lowest previous capacity was 0-30 lbs.



Air cell measures small loads in tension or compression

Description: An air jet and baffle within the Tate-Emery air cell controls action of a pneumatic force balance system, so that air pressure automatically balances load. Air pressure variations, caused by loading, are transmitted to indicator used with cell. Total movement of load-sensitive member is less than 0.0005".

When a standard Tate-Emery indicator with 66" scale is connected with cell, the 0-2 lb range shows pointer

movement of approximately 2" for 1 oz. or 1/16" for 1 gm. Ranges are changed in the indicator. Portable Bourdon gauge type indicators with 22" scale are available for use with these cells when existing indicators do not readily accommodate additional ranges.

With Bourdon gauge type indicators, accuracy of load measurement is within 3/4% of reading or 0.15% of capacity, whichever is greater. With the Tate-Emery load indicator, accuracy is 1/2% of reading or 0.1% of capacity, whichever is greater.

Compression heads are 2 1/2" dia. A threaded extension is provided at opposite end of cell for tension loading. Cell diameter is 4 1/2". They withstand heavy overloads.

Source: Manufactured by The Baldwin Locomotive Works, Dept. CP, Philadelphia 42, Pa. . . . or for more information check CP 9580 on handy form, pages 2 and 3.

**Aids electrometric titrations
of all kinds . . .**

meter of titrator used concurrently for titrating and pH procedures; continuous sensitivity control

Uses: For electrometric titration procedures such as Karl Fischer, oxidation-reduction, acid-base and precipitation methods.

Features: Meter can be used concurrently for pH and titration work: it has separate circuits and controls for each of these uses. Continuous sensitivity control and

Completely Automatic Control of Plant Processes.

LOWERS PRODUCTION COSTS
INCREASES PRODUCTION FROM
PRESENT EQUIPMENT
IMPROVES PRODUCT QUALITY
INSURES UNIFORMITY OF
PRODUCT QUALITY

BRISTOL'S SYSTEM OF
COORDINATED PROCESS CONTROL—
PIONEERED BY BRISTOL OVER
20 YEARS AGO
PERFECTED THROUGH HUNDREDS
OF SUCCESSFUL INSTALLATIONS

WHAT IT IS . . . Bristol's System of Coordinated Process Control culminates 60 years of precision instrument making. It is an engineered combination of automatic control instruments built in the form of a master control station. It controls, coordinates and interlocks all the vital variables in the processing cycle so that each takes place precisely *when* it should and *how* it should. A Bristol Cycle Controller acts as the "mechanical brain", coordinating all the other instruments. The system is shipped completely assembled, requiring only main power and air connections to put it to work in your plant.

WHAT IT DOES . . . Coordinated Control allows plant processing to conform to the exact plan which research and experience show produces optimum results. It times the operation of valves, pumps, blowers, dampers, switches, etc., and controls at predetermined values such variables as temperature, pressure, liquid level, flow, humidity, speed, pH, and vapor concentration. It eliminates variations in processing that cause inefficiency. It cuts down rejections and waste . . . insures product uniformity . . . quickly pays for itself.

WHY YOU SHOULD INVESTIGATE BRISTOL COORDINATED CONTROL . . . For every industrial process there is one set of conditions which produces the

best results. These conditions can be achieved in the laboratory or pilot plant, but usually with difficulty in actual production. With Bristol Coordinated Control, the exact "formula", sequence of operations and degree of control necessary for maximum plant efficiency, product quality and uniformity can be transferred to the production stage with mathematical precision. The control system holds processing to the proper schedule and maintains the set conditions known to produce the best results . . . automatically. The apparatus is extremely flexible. Processing schedules are easily adapted to changing conditions.

NEW EFFICIENCY FOR A NEW ERA . . . With costs up all along the line, processing efficiency is more important than ever in securing competitive advantage. Bristol's Coordinated Process Control System is the most modern, most effective way to meet the challenge of rising costs . . . to secure new margins of profits . . . to open up new productive horizons. Each installation is separately engineered to the requirements of the process involved.

One example of its use is shown nearby. There are hundreds. Have us tell you more. THE BRISTOL COMPANY, 141 Bristol Road, Waterbury 91, Conn. (The Bristol Co. of Canada, Ltd., Toronto, Ont.; Bristol's Instrument Co., Ltd., Lynch Lane, Weymouth, Dorset, England.)

AUTOMATIC CONTROLLING, RECORDING,

PROCESS INSTRUMENTATION

transposability of scale readings result in high flexibility which permits meter's use with all types of electrometric titrations.

Provision is made for using polarized electrode systems, found to be advantageous in titrations such as the Karl Fischer water determination.

Description: Titrator stand has built-in magnetic stirring, the activating magnet being contained within beaker support. Driving motor is mounted inside base where it is protected from dust and splashes and where its weight adds stability to the stand and attached burets. Solutions are added manually from these burets during titrations, using meter as visual indicator.

The Nylab titrator operates from 115-volt, 50/60-cycle line current only.

Source: Product of New York Laboratory Supply Co., Inc., Dept. CP, 76-78 Varick St., New York 13, N. Y. . . or for more information check CP 9582 on handy form, pages 2 and 3.

Time entire process with one automatic timer . . .

handles continuously-repeating cycle, single cycle, or interrupted cycle processes

Uses: To time process periods in terms of percentage of total process time.

Features: Wide speed range with infinitely variable adjustment. Individually adjustable periods. Motor cut-off stops timer at end of cycle if process is not continuously repeating. For interrupted cycle operation, motor cut-off stops timer until re-energized by thermostat, limit switch, etc.

Description: Synchronous motor moves control arm radially around calibrated circular scale. Adjustable stationary contacts are located on periphery; arm makes and breaks contacts with each in succession. Driver and driven pulleys have inverted quarter circle faces so idler wheel is perpendicular to pulley faces in any position.

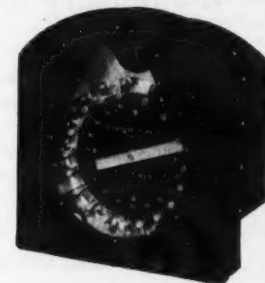
Total cycle is adjustable from 0.25 to 9 minutes. Other timing ranges are available. Isolating transformer with 24-volt secondary is included to provide low voltage control for auxiliary relay panel.

Repetitive accuracy of timer makes split second stop watch calibration feasible, it is reported. Adjustment time is minimized, since one phase of process can be adjusted without affecting other phases unless timer contact, which requires adjustment, performs multiple functions.

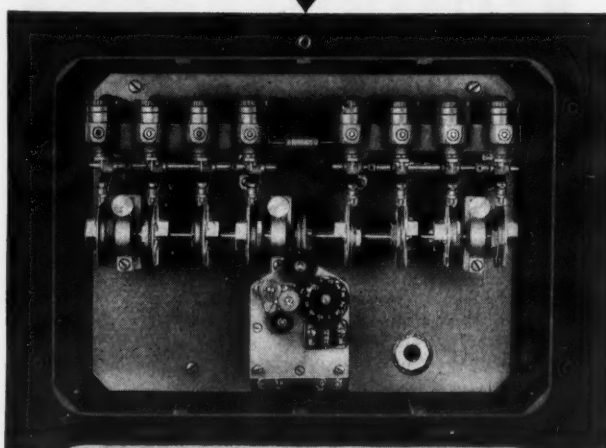
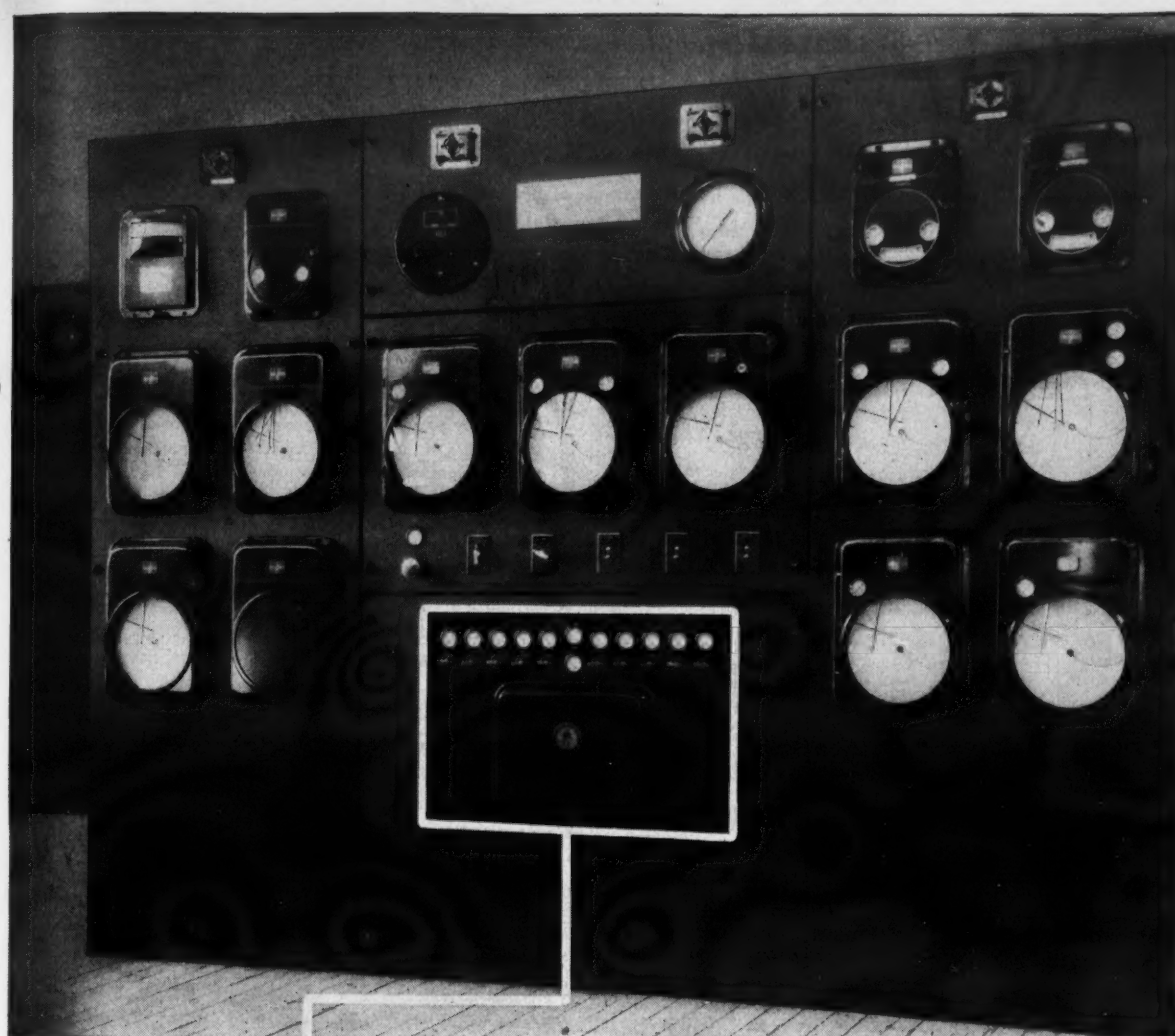
Sustained impulses required to energize most processes can be obtained from momentary impulses of timer by use of mechanical latch-type relay which can be electrically reset. If any two relays operate simultaneously in either direction they can be energized from same contact.

Contained in metal housing 14" high, 12½" wide, 8" deep.

Source: Produced by Struthers-Dunn, Inc., Dept. CP, 150 N. 13th St., Philadelphia 7, Pa. . . or for more information check CP 9583 on handy form, pages 2 and 3.



Process timer



Bristol Process Cycle Controller, the "MECHANICAL BRAIN" of the above Coordinated Process Control System.

Above is a picture of a typical Bristol Coordinated Process Control System—completely automatic control of plant processes according to the schedule known to produce the desired results. Hundreds of these systems are in successful operation today. This modern technique of process control is being used by some of the most progressive and successful manufacturers in this country.



AND TELEMETERING INSTRUMENTS

When inquiring check CP 9581 on handy form, pgs. 2-3



The direction of plus- A summary of achievement

Precision engineering research is responsible for uncompromising improvement . . . that every laboratory may have the benefit of even the most recent development.

A glance at the two illustrations above will readily reveal the caliber of engineering advancement responsible for the leadership of Precision-Freas constant temperature equipment. The streamlined mechanical convection oven on the right is a great improvement over its gravity convection predecessor.

As no improvement is ever accepted as final, as no design is ever taken as the last word, persistent engineering advancement and uncompromising improvement is the rule as we endlessly progress in the direction of plus.

Precision Scientific Company

3737 West Cortland Street • Chicago 47, Illinois

BRANCH OFFICES in New York, Philadelphia, San Francisco
DEALERS in ALL PRINCIPAL CITIES

When inquiring check CP 9584 on handy form, pgs. 2-3

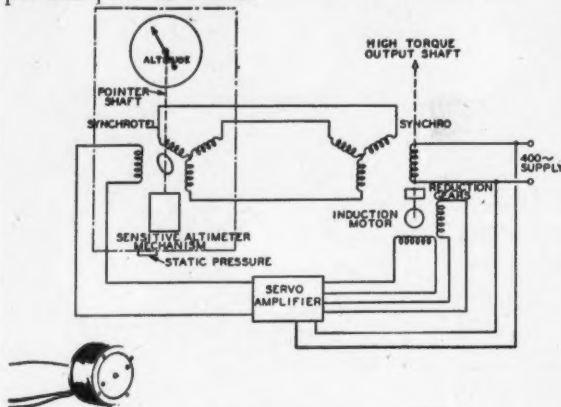
PROCESS INSTRUMENTATION

Small servo control transformer follows high accelerations, rapid oscillations . . .

follows low-torque movement of sensitive instruments where regular servomechanisms cannot be used

Uses: To serve as control transformer in servo systems where driving torque is too small to use conventional servo transformers. Other uses include following of high accelerations, rapid oscillations.

Features: Light-weight rotor follows rapid or low-torque movements. Smaller, lighter, greater electrical output than previous models.



Use of servo-control transformer with sensitive pressure indicator

Description: Rotor weighs $\frac{3}{4}$ gram, is oblique section of hollow closed cylinder; has one end left on to attach to shaft. Rotates in clearance space between stator teeth and core. Shaft ends in .018" instrument pivots which run in sapphire bearings.

Source: Produced by Kollsman Instrument Division of Square D Co., Dept. CP, 80-08 45th Ave., Elmhurst, N. Y. . . . or for more information check CP 9585 on handy form, pages 2 and 3.

Steps down high voltages in outside location . . .

weatherproof transformer used with control devices; rated at 2400:120 and 4800:120 volts, 60 cycles

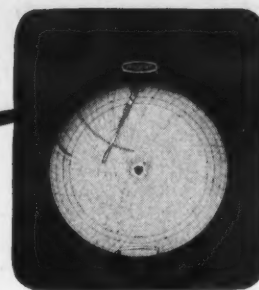
Uses: Transformer is designed for outdoor use in operating meters, relays and control devices.

Features: Core and coils impregnated with asphalt-base compound of high dielectric strength which makes coils impervious to moisture. Primary and secondary terminals mounted in such a manner that unit is weatherproof. Finish of sealed case is highly resistant to damage from severe weather conditions. Dry-type unit can be mounted vertically, horizontally or inverted.

ASA accuracy classification at 60 cycles is high. Insulation sufficient for 60-kv, full-wave impulse level.

Description: Type JEA-3 potential transformer is available in ratings of 2400:120 and 4800:120 volts, 60 cycles. While normally rated 200 volt-amperes, on a thermal basis this type will carry 300 volt-amperes continuously without exceeding the allowable temperature rise of 55°C above 30°C ambient temperature.

Cylindrical case is made of 1/16" thick, sheet steel, seam welded. Cover and bottom are welded to case around



Easier, More-Exact pH REGULATION

• For any process requiring accurate records or close control of pH, Foxboro Dynalog Electronic Instruments offer pH measurement with high accuracy and negligible maintenance. Difficult temperature and pressure conditions can often be handled by either flow or immersion type electrodes. pH of as many as 6 points in a process can be recorded on a single round chart instrument. Integral pneumatic or electric control is available, choice being dependent on requirements.

The Foxboro Company, 190 Neponset Ave., Foxboro, Mass., U. S. A. Branches in principal cities.

FOXBORO

pH
RECORDERS

When inquiring check CP 9586 on handy form, pgs. 2-3

READ
VISCOSITY
DIRECTLY

AND
CONTINUOUSLY

The F & P Continuous Viscosimeter constitutes a radical departure from the conventional method of viscosity measurement.

This Viscosimeter is available in simple indicating form, or arranged for continuously recording viscosity values on a 24-hour chart or for controlling fluid viscosity by automatic blending or heating means.

This instrument has proven particularly valuable for continuously blending lube oils, indicating the end points in various chemical processes and in the maintenance of constant fuel oil viscosity for improved oil burner operation. As yet its field of applications is virtually untapped.

Write for catalog Section 88-A

FISCHER & PORTER CO.
DEPT. 9P-9E, HATBORO, PENNA.

When inquiring check CP 9587 on handy form, pgs. 2-3

PROCESS INSTRUMENTATION

entire circumference. Grounding lug provided. Finish consists of 2 coats of paint, the first baked on and the second blue-grey coat air-dried.

Core and coils are bolted to brackets in casing. All joints in primary and secondary are electrically brazed for strength.

Primary terminals are brought out through porcelain bushings at top of transformer. These bushings are gasketed to case with synthetic rubber gaskets. Clamping ring maintains uniform pressure on gasket to assure tight joint. Each primary terminal is equipped with clamp connector to take No. 8 to 2/0 conductors.

Secondary terminals are threaded studs in weatherproof compartment on side of case. They are mounted on laminated Textolite block and sealed to case by synthetic rubber gasket. Three 1" conduit outlets are provided on secondary terminal compartment.

Source: General Electric Co., Dept. CP, Schenectady 5, N. Y., is the maker . . . or for more information check CP 9588 on handy form, pages 2 and 3.

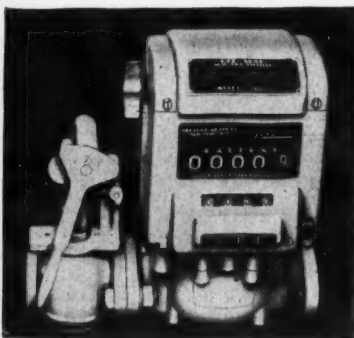
Simplify and speed delivery of petroleum products . . .

weatherproof meter-registers used in bulk plants, on tank trucks; print receipt of gallonage

Uses: Provide means for assuring accurate deliveries of petroleum products and keeping a record of such deliveries. Registers are adaptable to manufacturer's meters, used in bulk plants and on tank trucks.

Features: These registers save 2" on the required installation height by eliminating need for operating clearance. They save more than 15 lbs on the average truck compact meter. Resetting and ticket printing done simultaneously by one handle. Weatherproof.

Calibration of meters with registers is easy and positive. Change gear shifter permits sensitive calibration in steps of about 0.15% and will not drift out of adjustment.



Register for use with petroleum product meters

Description:

Four types are available. The simplest type is the direct-reading reset counter with totalizer. Second type has Auto-Stop feature, permitting operator to set gallonage to be delivered and letting register stop flow automatically at desired point.

Third type, the Print-O-Meter, prints receipt ticket

showing gallonage delivered. Three serial number wheels are provided for consecutive numbering of tickets. Two letter wheels provide truck or station designation.

Fourth type combines features of Auto-Stop and Print-O-Meter. Printed numerals are large and clear. Delivered gallonage is always visible on face of register.

Source: Series "400" Red Seal meter registers are made by Neptune Meter Company, Dept. CP, 50 W. 50th St., New York 20, N. Y. . . . or for more information check CP 9589 on handy form, pages 2 and 3.

APRIL, 1949

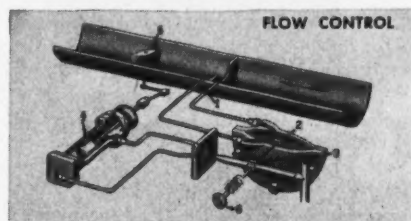
For Automatic, Accurate Operation of Small Valves, Dampers, Butterfly Valves



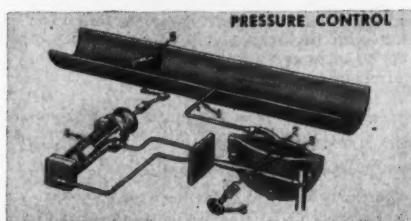
The Askania Jet Pipe amplifies even a minute signal into a powerful movement of a hydraulic cylinder to operate control valves, dampers or other mechanisms.

The Jet Pipe swings freely on a hollow vertical bearing into which oil is supplied. As the oil leaves the nozzle of the Jet Pipe it strikes at two closely adjacent openings in a cylinder block. The Jet Pipe moves right or left with the slightest change of signal, allowing more or less oil to enter the right or left opening.

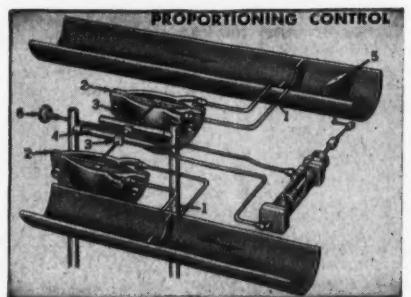
This in turn, moves the piston to right or left producing proportional cylinder action. As soon as equilibrium is re-established the Jet Pipe returns to its neutral position and the piston stops.



Differential pressure (1), measured by diaphragm (2). Flow changes deflect Jet Pipe (3), causing proportional cylinder movement (4), and positioning of valve (5). Setting-Dial for desired flow (6).



Pressure (1), measured by diaphragm (2). Pressure changes deflect Jet Pipe (3), causing proportional cylinder movement (4), and positioning of valve (5). Setting-Dial for desired pressure (6).



Differential pressures (1), measured by individual diaphragms (2). Signal transmitted to opposite sides of Jet Pipe (3). Any unbalance deflects Jet Pipe (4), causing proportional cylinder movement and positioning of valve (5). Setting-Dial for ratio (6).



...with PRECISION Jet Pipe Control

The Askania Unit Regulator is the exacting answer to many pressure, flow and proportioning control problems. Its accurate, reliable operation is assured by the highly sensitive Askania Jet Pipe which converts a signal or impulse from the source of measurement into a proportional rate of movement of the piston operating the valve or damper.

The Unit Regulator is a complete system with built-in pump and motor. The power cylinder may be mounted at any convenient location up to 50 feet away from the regulator.

Designed specifically for precision operation of small valves, dampers and butterfly valves, the Unit Regulator has all the features of other larger, more powerful Askania regulators.

Send for Bulletin

For details on the Unit Regulator please ask for Askania Bulletin 105.



ASKANIA REGULATOR COMPANY

A Subsidiary of General Precision Equipment Corporation
242 EAST ONTARIO STREET, CHICAGO 11, ILLINOIS



When inquiring check CP 9590 on handy form, pgs. 2-3

(A Quick Quiz on modern pH advancements)

Do you know...



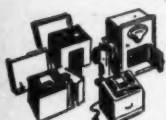
That Beckman pioneered modern glass electrode pH equipment?

Until Beckman pH instruments were developed, glass electrode pH equipment was a cumbersome, complicated laboratory curiosity. It was Beckman that pioneered today's simple, compact, highly accurate and completely dependable glass electrode pH equipment!



That Beckman pioneered virtually every major development in modern glass electrode pH equipment?

Such far-reaching advancements as the High pH Glass Electrode . . . the High Temperature Glass Electrode . . . the Unusually Rugged "X-9" Glass Electrode . . . as well as a wide range of other vitally important advancements in glass electrode pH instrumentation, were all pioneered by Beckman. Many of these advancements are still available exclusively in Beckman equipment!



That Beckman offers the industry's most complete line of glass electrode pH instruments?

Included in the complete Beckman line are instruments specially designed to combine the high precision and wide versatility necessary for advanced research, medical and laboratory applications . . . others that combine maximum simplicity and high accuracy with complete portability for plant and field applications . . . still others that combine maximum simplicity and high accuracy with the plug-in convenience of full AC operation . . . plus completely automatic pH equipment for continuous pH indication, recording and control on large-scale processing applications.

Do you know these important facts about **BECKMAN pH CONTROL?**



That Beckman also provides the industry's most complete line of modern glass electrodes?

Although glass electrode pH instruments are the most efficient pH equipment obtainable, no glass electrode pH instrument is better than the versatility, accuracy and dependability of the electrode assemblies available for use with it.

Beckman provides the industry's most complete line of glass electrodes for use with Beckman pH instruments—a type of electrode assembly to meet every industrial, research, laboratory and field requirement!



That there are so many money-saving applications for Beckman pH control that you may be losing important profits unless you make a complete investigation of your operations?

There is pH wherever there's water, water solutions, moist pastes, sludges, slurries or other moisture-containing substances. And wherever there is pH, chances are the operation can be done better . . . with greater uniformity and less waste at lower overall cost . . . by Beckman-controlling the pH of the various processing operations.

WHETHER you manufacture food products or treat sewage . . . do metal plating or refine crude oil . . . make textiles or process ore—in fact, no matter WHAT your field of operation . . . if you have not yet determined whether Beckman pH Control can be used to advantage in your operations—possibly is already being used to cut costs by your competitors—let us study your processes and make helpful recommendations. No obligation, of course. BECKMAN INSTRUMENTS, NATIONAL TECHNICAL LABORATORIES, SOUTH PASADENA, 11, CALIFORNIA.

For an informative, non-technical outline of modern pH control—what it is and how it's used—send for this free booklet "What Every Executive Should Know About pH."



BECKMAN

INSTRUMENTS CONTROL MODERN INDUSTRIES

pH Meters and Electrodes — Spectrophotometers — Radiation Meters — Special Analytical Instruments

When inquiring check CP 9591 on handy form, pgs. 2-3

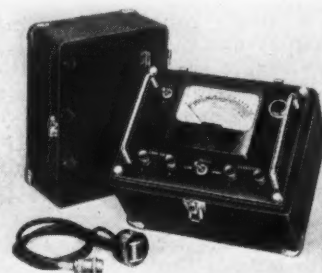
PROCESS INSTRUMENTATION

Measures thickness of coatings on iron or steel . . .

coil measures thickness of non-magnetic coatings quickly, without damage to surface

Uses: To measure thickness of non-magnetic coatings such as paints, enamels, platings, protective coatings, scale, coke deposits, etc.

Features: Compact, direct-reading, portable. Light-weight battery supply makes field use feasible.



Gauge measures thickness of non-magnetic coatings

Description:

Coil is connected to bridge circuit. When coil is in direct contact with base metal its self-inductance is high; bridge is then balanced for zero thickness. When placed over coating, increased gap between coil and metal reduces self-inductance, unbalances bridge, and current actuates indicating ammeter.

Contained in carrying case 8" x 9" x 6"; weight is 10 lbs. Power furnished by two 67½ v. batteries and one 1½ v. battery. Thickness readings are reported to be within 10% of actual thickness over range of from .0001" to .5".

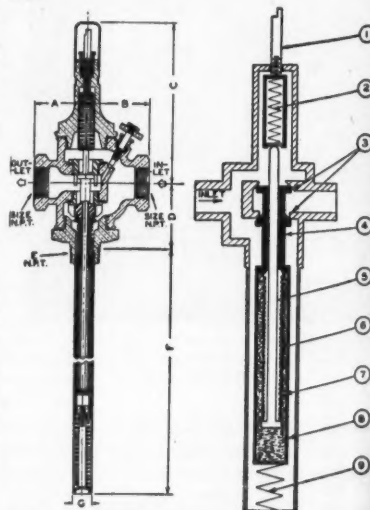
Source: Product of Branson Instruments, Inc., Dept. CP, Stamford, Conn. . . or for more information check CP 9592 on handy form, pages 2 and 3.

Maintain constant temperature with cooling control . . .

self-operated, rigid-stem temperature regulator limits cooling-water flow

Uses: To limit flow of cooling water through engine and compressor jackets, hydraulic presses, vapor degreasers, condensers, etc.

Features: Balanced, double-seated valves provide accurate control without sticking or chattering. Separable socket allows regulator to be removed for inspection without interrupting operation.



Detailed and simplified views of cooling-water controller

Description:

sectional drawing on right illustrates operating principle. As heat is applied to thermostat, oil within bulb (8) expands, compressing bellows (6) and lengthening thermostatic member. Relief spring (2) is stronger than spring below bulb, so oil-

CHEMICAL PROCESSING Preview

Heat Measurement that's ACCURATE and EASY!



If you have a heat measurement problem, why not take a tip from production men in almost every industry who depend on rugged, accurate Alnor Pyrometers? There are sizes and types for a wide range of uses: for instance, Alnor type 1500 is a compact, portable, magnetically shielded pyrometer that brings laboratory accuracy to temperature measurement on the production line. Pyrometer movement is Alnor double air-gap type with Alnico magnet—product of skilled instrument technicians. This and other Alnor Pyrometers are fully described in bulletin 4361. Why not send for a copy now? Illinois Testing Laboratories, Inc. Rm. 504, 420 N. LaSalle Street, Chicago 10, Illinois.

Alnor PRECISION INSTRUMENTS
FOR EVERY INDUSTRY

When inquiring check CP 9593 on handy form, pgs. 2-3

HERE'S HELP

for your testing and
measuring problems



At Mohawk Carpet Mills
this G-E Spectropho-
tometer made it possible
to double the amount of
wool dyed at one time.

You may be able to solve your measurement problems with General Electric specialized instruments. This comprehensive G-E family includes equipment for:

MEASURING

Time, Speed, and Torque
Force, Strain, and Thickness
Vibration, Sound, and Balance

TESTING

Materials
Coils and insulation
Leak-tightness

and for CHEMICAL ANALYSIS

GENERAL ELECTRIC TESTING AND
MEASURING EQUIPMENT FOR
NEARLY EVERY INDUSTRIAL
PROCESS

Your problem, particularly if it is one common to industry, may justify developing a new instrument. Apparatus Dept., Section 687-9, General Electric Company, Schenectady, New York.

GENERAL ELECTRIC

PROCESS INSTRUMENTATION

expansion forces bulb down, opening valve. Valve opening is proportional to degree of cooling required.

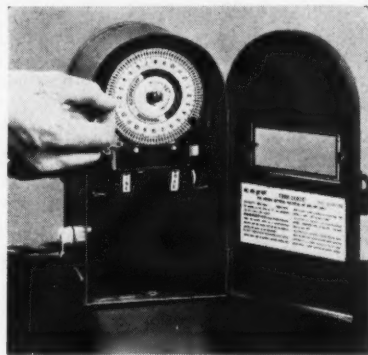
Source: Produced by Sarco Co., Inc., Dept. CP, Empire State Building, New York 1, N. Y. . . or for more information check CP 9595 on handy form, pages 2 and 3.

Starts, stops electrical devices at preset times in week . . .

clock-switch is set to repeat on-off cycle every day, or to skip any day of week

Uses: Automatically turns electrical equipment on and off according to preset time cycle. Finds use on many kinds of laboratory apparatus.

Features: Can be set as much as a week in advance. Cycle can be made to repeat every day at the same time, or it can be arranged to skip any day in the week (Sat. and Sun., for example).



Times on-off operation of electrical equipment

wheel adjustment sets the days in the week on which the cycle is to be repeated.

Source: Fisher Scientific Co. and Eimer and Amend, Dept. CP, 717 Forbes St., Pittsburgh 19, Pa. . . or for more information check CP 9596 on handy form, pages 2 and 3.

Repeated timing intervals interchangeable and adjustable . . .

timer intervals variable from 0.2 to 200 seconds and 0.1 to 60 seconds

Uses: Repeated cycle timing.

Features: ON

time interval ad-

justable from 0.2

seconds to 200

seconds; OFF time

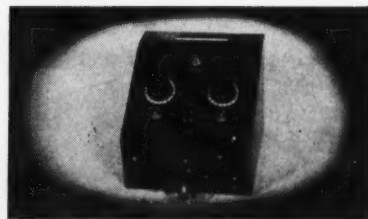
interval adjustable

from 0.1 to 60

seconds. DPDT

contacts permit in-

terchanging of intervals.



Repeat cycle timer

Description: Charging of variable resistance-capacitance networks provides timing interval regulation. Contained in sloping front cabinet 6" x 6" x 6"; DPDT contacts rated at 10 a. at 115 v. or 2 a. at 460 v. Longer or shorter intervals are available.

Source: Produced by G. C. Wilson & Co., Dept. CP, Chatham, New Jersey . . . or for more information check CP 9597 on handy form, pages 2 and 3.

Empire Industrial Meters

ALL SIZES . . . A VARIETY
OF REGISTERS



Straight reading (non-reset or set-back type) or two hand, vertical dial type set-back registers optional. Automatic shut-off valves and temperature compensators available.

Save Time, Money—Provide Accurate Controls in Blending, Processing, Handling Liquids

METERING PAYS

In blending operations, Empire meters provide exact control over the quantities going into each batch. They save time, the meter method being much quicker than stick gauging, weighing or waiting for batch tanks to fill. Too, with a closed system controlled by Empires, you eliminate spilling, evaporation losses, fire hazards and contamination. Empire meters also are widely used for inventory control and to supply cost data on all piped liquids within the plant. Get the facts on Empire meters now. Use the coupon or write fully.

A THOUSAND AND ONE APPLICATIONS

| | | |
|------------------------|--------------------|----------------------------|
| Acetone | Cresol | Oil, mineral |
| Alcohols | Crystalline Acid | Prestone |
| Ammonia, anhydrous | Cutting Oil | Propane, liquid |
| Ammonia, aqueous | Cyanide Solutions | Rum |
| Amyl Acetate | Duco Thinners | Soap, liquid |
| Asphalt, hot liquid | Fuel Oil | Sodium Carbonate, solution |
| Beer | Gasoline | Sodium Hydroxide, solution |
| Benzene | Gin | |
| Benzol | Glycerine | |
| Brines | Graze, lubricating | Toluene |
| Bulene, liquid | Hot Water | Trichloroethylene |
| Carbon Tetrachloride | Kerosene | Thinners |
| Caustic Soda solutions | Lacquer Thinners | Turpentine |
| Coal Tar | Linseed Oil | Varnish |
| Cod Liver Oil | Lubricating Oil | Water |
| Cotton Seed Oil | Molasses | Whiskey |
| Cresote Oil | Naphtha | Wine |

Many other liquids may be metered under the proper operating conditions. Write for information on those not listed.

Pittsburgh Equitable Meter Division
Rockwell Manufacturing Company
405 Lexington Ave., Pittsburgh 8, Pa.



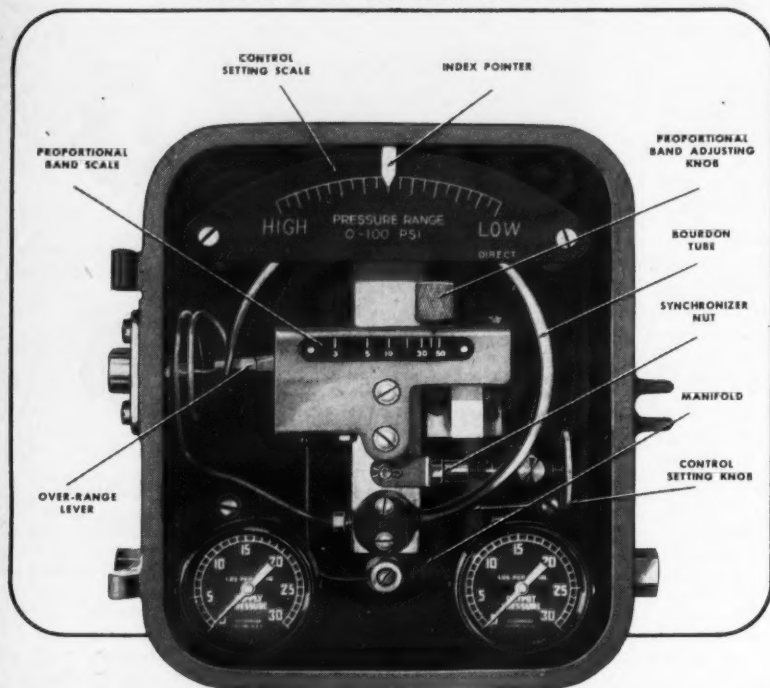
When inquiring check CP 9598 on handy form, pgs. 2-3

When inquiring check CP 9594 on handy form, pgs. 2-3

Announcing

No. 2700 Pressure Controllers

Providing Precise Response and Proportional Control at Moderate Cost



These controllers are designed for many industrial applications requiring accurate control where more expensive instruments are not warranted.

Applications include, among many others, pump governors, steam pressure reducing stations, gas well pressure reduction, etc., requiring small to in-

termediate proportional band.

The case is rugged and suitable for outdoor service; it is so designed that it may be mounted on the valve (on integral pad or by means of a U-clamp) or, *if the occasion arises, it may be removed from the valve and mounted on a wall.* A flush type case is also available for panel mounting.

MASONEILAN

MASON-NEILAN REGULATOR CO.

1203 ADAMS STREET, BOSTON 24, MASSACHUSETTS, U. S. A.

Sales Offices or Distributors in the Following Cities

New York • Syracuse • Chicago • St. Louis • Philadelphia • Houston • Denver
Pittsburgh • Cleveland • Cincinnati • Tulsa • Atlanta • Los Angeles • San Francisco
Mason-Neilan Regulator Company, Ltd., Montreal and Toronto

When inquiring check CP 9599 on handy form, pgs. 2-3

PROCESS INSTRUMENTATION

Stabilize voltage within 0.1 v. of preset value . . .

output of small, portable voltage regulator is adjustable between 110 and 120 volts

Uses: Voltage regulation at any point from 110 to 120 volts.

Features: Portable; rated output to 250 volt-amperes. Maximum output voltage variation reported to be less than plus or minus 0.25%; with stable input, variations in load current will affect output voltage less than 0.1%.



Portable voltage regulator

Description: Speed of correction is from 3 to 6 cycles. Dimensions are 11½" x 11½" x 10¼"; fitted with handles, 6' cord and plug. Fuses located at input connection.

Load power factor range is given as 0.5 lagging to 0.9 leading; regulation of stabilized output plus or minus 0.15 volts.

Source: Produced by The Superior Electric Co., Dept. CP, 76 Hannon Ave., Bristol, Conn. . . or for more information check CP 9600 on handy form, pages 2 and 3.

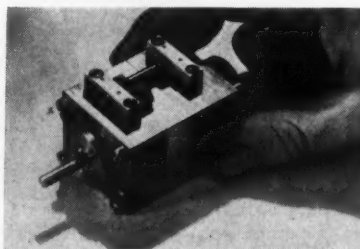
Reduces overall time lag of control circuit to order of 1 millisecond . . .

clutch-brake servomechanism reduces time lag, gives superior speed and torque outputs

Uses: High-speed control component in closed loop control circuits.

Features: Continuously rotating motor which drives clutch wheels provides energy reservoir; large amounts of energy can be delivered for short periods of time. This allows motor rating to be less than usually required for comparable service.

Stability considerations are simplified; time lag is reduced to order of 1 millisecond. Dynamic systems have performed at plus or minus ¼° uncertainty at 500°/second, and plus or minus 1° uncertainty at 1500°/second.



Clutch-brake control unit

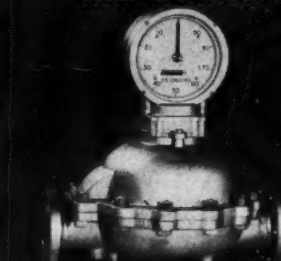
In operation, two counter-rotating clutch wheels run free. When clutch coil is energized, plunger exerts force on adjacent clutch, opposing brake spring force. Effect is that of output damping, but with damping decreasing as signal is increased.

Input is supplied to side gearing, allowing for convenient stacking of several servomechanisms and supplying them

Good News

CORROSION-RESISTANT LIQUID METERS

Now Available



with **NIAGARA**
CHEMICAL METERS

The same reliable measurement of liquids that has characterized Niagara Volumetric Liquid Meters for over 50 years is now being made available in a new line of NIAGARA Chemical Meters. Since all internal parts of the new Niagara Meters are of No. 316 stainless steel — except the special-type measuring piston — a wide range of corrosive liquids can be metered, with minimum maintenance requirements. Corrosive products such as caustic soda, most acids, molten sulphur can be measured, provided they are metered free from air.

The new Niagara Stainless Steel Chemical Meter is made in sizes 1" DV and 2" GV with capacities from 3 to 160 GPM.

Send Coupon for complete data!

Please send me full information on use of your new Niagara Chemical Meter for:

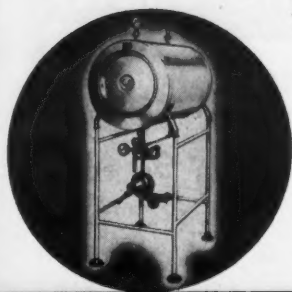
Liquid
Temp.°F. Pressure.....p.s.i.
Flow rateg.p.m.
Company
By
Address

BUFFALO METER CO.

2892 MAIN STREET
BUFFALO, N. Y.

When inquiring check CP 9601 on handy form, pgs. 2-3

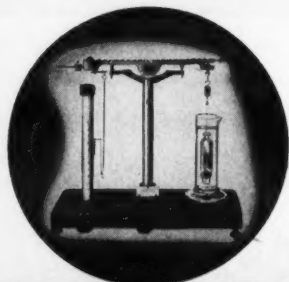
CHEMICAL PROCESSING Preview



AETNA AUTOCLAVE STERILIZER

All monel welded construction lends a permanent glistening exterior and interior finish to these units. Self locking door. Models are available for use with gas, steam and electricity. Write for information. Listed Autoclave 16" x 20" I.D.

77-332.... 115 or 230 V.... \$420.00



HOHWALD SPECIFIC GRAVITY CHAIN BALANCE

This balance has three distinct uses. Specific gravity of solids. Specific gravity of liquids. A chain balance. Bow Pan. \$7.50 extra for converting to chain type balance. Write for information.

5-555..... Cellulose Cover..... \$15.00
4-012..... Balance..... \$140.00



When inquiring check CP 9602 on handy form, pgs. 2-3

APRIL, 1949

PROCESS INSTRUMENTATION

from one input shaft. Output is taken from center shaft. Rated torque output is 12 oz. in. Recommended clutch speed is 500 RPM, although 1600 RPM operation is used in special applications. Clutch coil resistance is 180 ohms.

To take full advantage of high-speed performance of clutch unit, 4000 cycle A.C. circuit which determines error and direction of error, and applies D.C. error voltage to clutch coils, was developed. Phase sensitive detector is basic element of circuit, which combines stability of A.C. amplifiers with advantages of D.C. clutch coil applications.

Source: Developed by Buehler and Co., Dept. CP, 1607 Howard St., Chicago 26, Illinois. ... or for more information check CP 9603 on handy form, pages 2 and 3

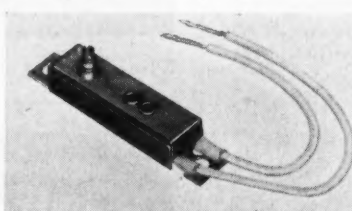
Control surface temperatures with strip-type thermostat . . .

shielded, housed unit is shockproof, light, compact; positive closing, quick adjustment cited

Uses: Thermostat is particularly adaptable for controlling surface temperatures.

Features: Since all metal parts are shielded, unit is shockproof. Compact: measures $2\frac{1}{2}$ " long, $\frac{3}{4}$ " wide and $\frac{1}{2}$ " high; weighs 2 oz. Self-locking adjustment screw provides positive closing and quick adjustment.

Description: Strip type thermostat has nickel-plated



Housed, shockproof, strip type
thermostat

housing that withstands mechanical shock and can be mounted in any position. Nickel-stranded, Fiber-glas-insulated lead wire is used. Thermal responding element is insulated from switch and carries no current. Other parts are made of heat-resistant alloy metals, mica-insulated throughout. Provided with heavy-duty, heat-dissipating electrolytic silver contacts. 650°F maximum operating temperature.

Rated at 1500 watts, 115-230 volts AC. Mounting holes have $3\frac{1}{8}$ " centers. Can be supplied with heat-range limit adjustment shaft if desired.

Source: Maker is George Ulanet Company, Dept. CP, 416 Market St., Newark 5, N. J. . . . or for more information check CP 9604 on handy form, pages 2 and 3.

Timers have 27 ranges, from 10 seconds to 24 hours . . .

cycle timer cams operate snap-action switches to control one, two, three, or four circuits

Uses: As cycle timer to time one to four circuits in specific time schedule or sequence operation.

Features: Available in 27 time ranges from one revolution in 10 seconds to one revolution in 24 hours.

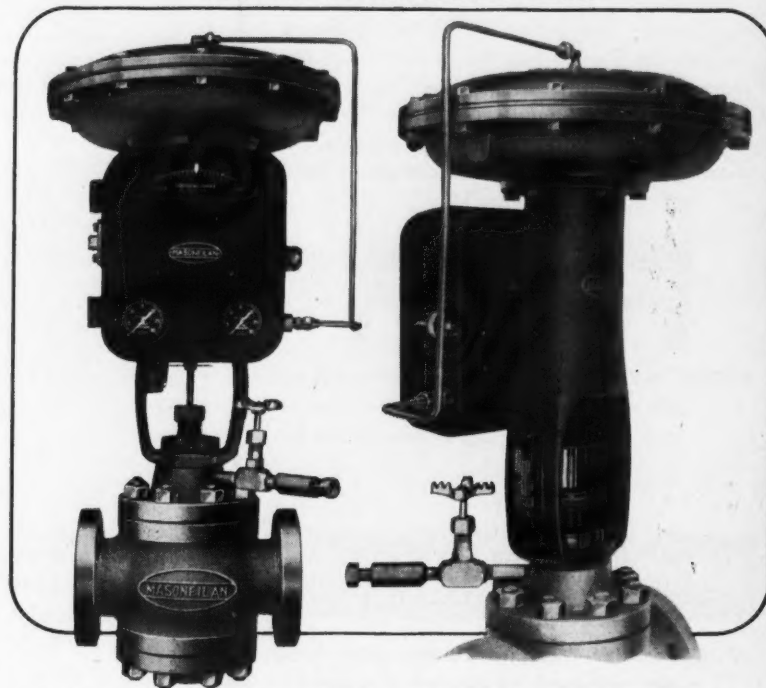
Description: Synchronous motor operates cams which open and close dust-proof snap-action switches. Operating time adjustable from 6° to 354° of total time cycle.

Source: Produced by The R. W. Cramer Co., Inc., Dept. CP, Centerbrook, Conn. . . . or for more information check CP 9605 on handy form, pages 2 and 3.

Check These Outstanding Features of the New

No. 2700 Pressure Controllers

Providing Precise Response and Proportional
Control at Moderate Cost



1. Pneumatic proportionality accomplished with feed-back bellows and cantilever leaf spring.
2. Direct nozzle and flapper pilot with metering restriction.
3. Large powerful bourdon tube for greater response and control performance.
4. Adjustable proportional band between 3% and 50%.
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7. Ease and accessibility of adjustments.
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10. Control action reversible with either bourdon or bellows.
11. Manifold construction prevents transmission of any possible case distortion to control mechanism.
12. Set point indication.

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When inquiring check CP 9606 on handy form, pgs. 2-3

METERS

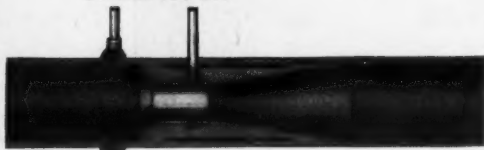
for HIGH PRESSURE FLOWS

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- ... High Accuracy
- ... Lifetime Dependability

High-pressure flow metering calls for equipment specially designed to take the punishment of this exacting service. These Builders Flow Nozzles working as differential producers with the Flo-Watch metering instrument, provide efficient, accurate flow metering that contributes to reduced power costs.



MODEL NZCS—Cast steel Venturi Flow Nozzle—for pressures to 600 p.s.i.g. Easy to install—has short laying length. Write for Bulletin 130-E1.



MODEL NZIW—Welded Venturi Flow Nozzle—withstands the same pressures as standard seamless steel pipe. Available for welded or flanged installation. Write for Bulletin 130-E2.

FLO-WATCH—Mechanical Flow Metering Instrument. Accurate, relatively low in cost, entirely self-contained. Ideal instrument for use with NZCS or NZIW. Write for Bulletin D11-300.20.



For complete information and Bulletins, address Builders-Providence, Inc., (Division of Builders Iron Foundry), Providence 1, R. I.

BUILDERS PRODUCTS

Flow meters and controllers... mechanical and differential... for liquids, steam, air, and dry materials.

BUILDERS-PROVIDENCE

Instruments

When inquiring check CP 9607 on handy form, pgs. 2-3

PROCESS INSTRUMENTATION

Designs air velocity meter as permanent fixture...

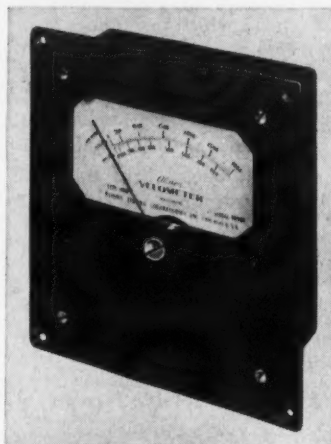
pressure-drop through flush-mounted instrument is near zero; minimum range 0-1000 fpm

Uses: Flush-mounted air velocity meter for permanent installation. Gives continuous indication of velocities.

Features: Instrument is highly accurate throughout its entire range because there is practically no pressure drop through it.

Description: Minimum range of Velometer is given as 0-1000 fpm; special ranges can be provided. This model is designed for use where permanent jets are to be installed in ducts for measuring velocity. Meter measures $7 \times 6\frac{1}{2} \times 2\frac{1}{8}$ ".

Source: Illinois Testing Laboratories, Inc., Dept. CP, 420 N. La Salle St., Chicago 10, Ill., is the maker... or for more information check CP 9608 on handy form, pages 2 and 3.

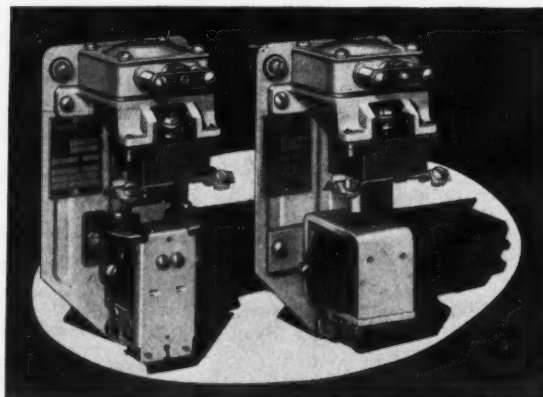


Air velocity meter for permanent installation

Quick finger-tip adjustment changes timing period of pneumatic timer...

covers range of 0.2 sec. to 3 min., operating from D-C line; variation less than plus-minus 10%

Uses: Timing of motor acceleration, machine sequences, process industry operations, resistance welds, etc.



D-C pneumatic timer

Features: Timing period adjustable from 0.2 seconds to 3 minutes. Timing adjustment made by quick finger-tip setting of knurled knob on micrometer dial. Accuracy unaffected by normal changes in voltage and ambient temperature. Electrical interlocks, operated by magnet which actuates timing mechanism, frequently eliminates need for additional switching relays.

Description: D-C pneumatic timer (Class 9050) is

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*Rapid
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The Fisher Electrophotometer permits colorimetric analyses wherever the solution color varies in a definite manner with the concentration of a constituent.

The Electrophotometer operates from any 110 volt, 60-60 cycle line. The photoelectric system it employs is considerably more sensitive and reliable than the human eye. **\$210.00**

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When inquiring check CP 9609 on handy form, pgs. 2-3

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NOW a fully dependable liquid density instrument is available designed for rugged production work, yet accurate to laboratory standards. Unaffected by ordinary plant conditions, the DENSITROL® provides continuous indicating, recording and/or controlling of process liquid densities.

Overall density limits of the DENSITROL are from 0.6 to 3.5 d. with spans of 0.10 to 0.005 d. full scale or equivalent. It is available with manual or fully automatic compensation for temperatures up to 200° C. Models are furnished for pressures up to 150 p.s.i.

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When inquiring check CP 9610 on handy form, pgs. 2-3

PROCESS INSTRUMENTATION

similar in construction to manufacturer's A-C design. It provides less than 10% variation, plus or minus, from mean timing period. Snap-action contacts, rated for either A-C or D-C control circuits, are normally open and normally closed in self-contained, arc-resistant melamine case.

Timers are made for time delay after energization or de-energization of the magnet.

Source: Developed by Square D Company, Dept. CP, 4041 N. Richards St., Milwaukee 12, Wis. . . . or for more information check CP 9611 on handy form, pages 2 and 3.

Quick, accurate measurements of rubber hardness . . .

small gauge measures elastomer hardness, can be used on fixed rollers, platens, etc.



Measures elastomer hardness

Uses: To measure Shore hardness of all rubbers and other elastomers.

Features: Small, simple, accurate within rubber manufacturing tolerances.

Description: Picture indicates simplicity of design. Operator

applies 15-lb pressure on sample placed on hard, flat surface. Area of contact should be $\frac{3}{4}$ " by $\frac{1}{2}$ " flat. Cylinders or curved surfaces with radii as short as $\frac{1}{2}$ " may be measured if contact extends more than 2" parallel to axis.

Calibrations are designed for measurement at 20°C.

Source: Produced by Trionic Company of America, Dept. CP, 11927 W. Pico Blvd., Los Angeles 34, Calif. . . . or for more information check CP 9612 on handy form, pages 2 and 3.

Determines internal stress in electrodeposits . . .

angular displacement of helix-wound metal strip proportional to internal stress in deposits

Uses: To determine internal stress in electrodeposited coatings.

Features: Compact, self-contained; features greater reliability, ease of handling than previous methods which relied upon measurement of bending of uncoiled strip.

Description: Flat metal strip is wound in shape of helix. Fixed upper end is connected to negative lead and suspended in plating solution. Rod running down axis of helix is connected to free lower end so that rotation of this end is transmitted to rod.

Rotation of rod is applied to gear train which produces 10-fold amplifications in rotation of dial pointer. Angular rotation of rod is read directly in degrees from dial and converted to units of stress on basis of calibration of helix used.

Source: Developed by National Bureau of Standards, Dept. CP, U. S. Dept of Commerce, Washington 25, D. C.

APRIL, 1949



★ A long life clearly predicted . . . Thanks to Hackney construction!

Long life and Hackney 2-Piece Acid Drums are synonymous—thanks to Hackney design and construction. First of all, seamless cold drawn construction means a stronger container. Then, there are no longitudinal or chime seams—just a single circumferential butt weld located between and protected by two I-bar rolling hoops.

Add to this sturdy construction special heavy

forged spuds to eliminate bung failures. Then, add reinforced chime protectors for extra strength and prolonged life. And then to increase resistance to corrosion, the finished container is stress relieved in automatic time and temperature controlled furnaces.

That's why Hackney Drums make so many extra trips—why they are such economical containers.

Write for full details on Hackney 2-Piece Acid Drums



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CONTAINERS FOR GASES, LIQUIDS, AND SOLIDS

When inquiring check CP 9613 on handy form, pgs. 2-3



..... 8" SCALE—the Widest Scale of Any Mechanical Air Velocity Meter Ever Designed!

- ☆ Accurate velocity readings, automatically averaged over a 3" dia. free area, instantly indicated in feet per minute.
- ☆ Extension handle facilitates positioning of instrument away from the observer. 1/2" rod may be screwed into handle to obtain any desired extension. This is an important practical feature for readings in hard-to-reach locations, or where the observer's body would interfere with the normal air movement.
- ☆ The unique scale lock (easily manipulated by a string) retains scale reading until the lock is released—an indispensable feature where extension rod is used to position instrument away from the observer.

COMPLETE, in leather case . . . \$24.00

Write for
Leaflet 760
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When inquiring check CP 9614 on handy form, pgs. 2-3



The acceptance of Mercoid Controls is universal. The reason is based on their record for dependable operation and long service. They are easy to install, adjust, and require practically no attention. The hermetically sealed mercury switches used in all Mercoid Controls are dust, dirt and corrosion-proof, thus assuring positive performance under all operating conditions.



Pressure Control—For various industrial applications. The operating range is plainly indicated on a visible dial. Adjustments are easily made.



Temperature Control—For numerous applications. The operating range is plainly indicated on a visible dial. No guesswork—easy to adjust.

See catalog No. 600 for complete information on all types of Mercoid Controls.

THE MERCOID CORPORATION
4211 Belmont Avenue, Chicago 41, Illinois

When inquiring check CP 9615 on handy form, pgs. 2-3

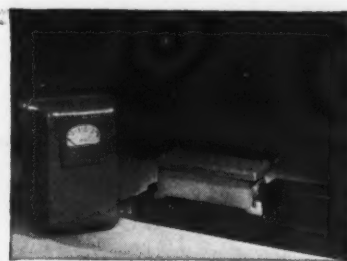
PROCESS INSTRUMENTATION

Distortion of loaded member shows on indicating dial . . .

magnetic strain gauge tells when crane is overloaded and near upset; assures safe structure loading

Uses: Measures small distortions in static member which result from tensile or compressive load. Useful as warning to operator when a crane is in danger of upsetting due to overloading, or on other metal structures where load variations may approach limits of safety of the supporting member.

Features: Sensitive to force as small as 20 lbs. Sensing element enclosed in water-tight case.



Magnetic strain gauge unit

Description: Case holding magnetic strain gauge measures 3 1/2 x 8 1/4 x 3 1/4". Pilot bar is rigidly mounted on supporting member of structure. Controller with indicating dial is located wherever desired. Operation is from single-phase, 110-volt, 60-cycle supply. Voltage and frequency variations should not exceed plus-or-minus 3%. Power required is 35 VA.

Source: Westinghouse Electric Corporation, Dept. CP, Box 868, Pittsburgh 30, Pa., is the maker . . . or for more information check CP 9616 on handy form, pages 2 and 3.

Fuel supply shuts off when oil-burner flame fails . . .

flame-failure safeguard prevents cycling of burner; fuel stays off if control, itself, fails

Uses: Flame-failure protection of semi-automatic and manually ignited industrial oil burners.

Features: Safety start circuit in control prevents burner from cycling if flame is detected or simulated prior to ignition. Failure of vacuum tube or phototube in monitoring units causes instantaneous safety lockout of burner. Electrical interlock prevents starting of burner if flame relay sticks closed.

Power relays located so that power contacts are readily accessible for cleaning. Flame relay sealed for unlimited life; plug-in feature simplifies replacement.



Flame-failure safeguard for oil burners

Description: Fireye system FF-3 includes photoelectric scanner type 45PH5 and control type 24QJ5. Scanner consists of phototube and vacuum amplifier housed in dust-tight aluminum case. It is installed on burner plate mounting so that it has clear view of flame. When flame fails, scanner signals the control, cutting off fuel supply and sounding alarm.

The control has 2 relays and a power transformer housed in dust-tight steel case. It is mounted on burner control panel.

System operates from 115/230-volt, 60-cycle source and



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When inquiring check CP 9617 on handy form, pgs. 2-3

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• Prevents Tragic Accidents

And Kleervu costs only \$10.00 for the 20-inch size — larger sizes at 25c per inch additional.

Approved by the California State Department of Labor for use in petroleum processing operations — equally safe for every type of pressure vessel in any industry — steam boilers, processing equipment, storage tanks.

Available in sizes from 4 inches to 8 feet in length. When ordering give distance between gauge glass packing nuts. More detailed information furnished on request.

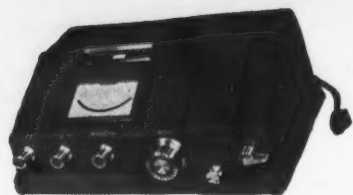


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Serving Steam Users For More Than Half A Century

When inquiring check CP 9618 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview



The NEW MODEL "B" BECKMAN SPECTROPHOTOMETER

Many advancements pioneered in the Beckman Quartz and Infrared Spectrophotometers are now offered in this lower priced instrument. Simplicity, convenience and versatility are combined without sacrifice of accuracy and reliability. It is a direct reading, line operated glass prism Spectrophotometer covering the range 320 to 1000 millimicrons with high resolving power.

For descriptive bulletin on Model "B" Spectrophotometer

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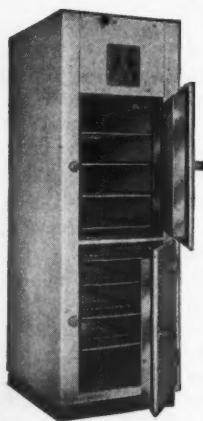
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When inquiring check CP 9619 on handy form, pgs. 2-3

"Anets" LABORATORY CABINETS
PRECISION CONTROL of TEMPERATURE and HUMIDITY
PAYS OFF in QUALITY and UNIFORMITY of PRODUCT



Just a turn of the dial produces any weather or testing condition from room up to 140° F and up to 93% relative humidity. Cooling equipment can be supplied for special applications at additional cost. Its all-electric automatic operation speeds up testing and sampling for instant control of quality and uniformity. Super-sensitive sealed-in controllers maintain the selected conditions within 1-1/2°. Used by leaders in electric, electronic, chemical, pharmaceutical, food, paint, medical and auto industries.



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- ★ Checking moisture absorption, package testing weathering and breakdown tests.
- ★ Testing plastics, fabrics, metals, woods, etc.
- ★ Incubation, germination, bacterial culture development, fermentation, proofing, etc.

STAINLESS STEEL CONSTRUCTION
New LSC-16 has full 7 cu. ft. capacity. Entire inner cabinet, ducts, air conditioner, blower wheel, ni-chrome heating unit, steam generator, water feeder, shelf hangers, door liners, etc., are made of heavy gauge stainless steel. Heavy moulded rubber gasket around doors for a perfect seal. Controlled, conditioned air is uniformly circulated to every shelf, from top to bottom of cabinet. Write stating your requirements, the operating ranges, etc., and our engineering department will gladly submit specifications.

ANETSBERGER BROS., INC.
168 N. ANETS DR. NORTHBROOK, ILL.

When inquiring check CP 9620 on handy form, pgs. 2-3

APRIL, 1949

PROCESS INSTRUMENTATION

consumes 20 VA (10 watts) power. Power contacts are single-pole, single-throw, 1HP, plus 125-VA pilot duty at 115 or 230 VAC. Ambient temperature: 32-125°F.

Can operate from 2-wire thermostat or pressure switch and manual-start pushbutton.

Source: Development of Combustion Control Corporation, Dept. CP, 77 Broadway, Cambridge 42, Mass. . . or for more information check CP 9621 on handy form, pages 2 and 3.

Resistance thermometers give temperature of bearings, pipes, tanks, dies . . .

two models are adapted to imbedding in bearings or attaching directly to metal surface

Uses: To measure, signal, or control temperatures of bearings, liquids in pipes or tanks, dies for plastics.

Features: Bearing-temperature model can be introduced directly into bearing metal or lining.

Surface-temperature model obviates necessity of introducing thermometer into pipe or tank to determine liquid temperature.

Description: Wound unit of bearing model is less than 1/4" long; is fused in glass, and unit imbedded into copper slug 0.32" in diameter. This can be introduced into hole in bearing body and pressed against lining by a gland and spring. Can be cast into babbitt bearings, it is reported.

Surface thermometer is wound on thin, flexible strip 2" by 1/2" and covered with mica. Pasted to tank or pipe and covered with insulation, indicated temperature is that of enclosed liquid, according to manufacturer.

Source: Produced by Paul G. Weiller, Dept. CP, 95 Broad St., New York 4, N. Y. . . or for more information check CP 9622 on handy form, pages 2 and 3.

Computer makes possible exact specification of colors . . .

combines data on reflectance of colored sample with that on light source, eye sensitivity

Uses: To make possible use of unambiguous numerical specifications in colorimetric problems.

Features: Combines accepted data on light sources and on sensitivity of the average eye with reflectance values given by spectrophotometer. Yields numerical values in 2 1/2 minutes, it is reported, whereas previously time required by calculations prohibited use of numerical specifications.

Description: Ball and disc integrator gives values with precision of 0.05%. Data from recording spectrophotometer are introduced by servo systems, while data on light sources and eye sensitivity are cut on cams.

Use of integrator with recording spectrophotometer enables distinctions to be made between 100,000,000 colors, it is reported. Device indicates not only whether a given color matches another, but describes the difference in accepted mathematical specifications.

Only minor modifications of spectrophotometer are said to be necessary, and computer may be placed inside existing case.

Source: Developed by General Aniline & Film Corp., Dept. CP, 230 Park Ave., New York 17, N. Y. . . or for more information check CP 9623 on handy form, pages 2 and 3.

A Handful of Prevention



... this MICRO Precision Switch can help prevent disaster!

One of the smallest explosion-proof switches listed by Underwriters' Laboratories, this MICRO precision switch has electrical capacity to meet requirements as a limit switch, safety switch, control switch and interlock.

Many thousands of these switches are in service in chemical plants, explosives and powder plants, petroleum refineries, grain elevators, distilleries . . . wherever hazardous atmospheres may prevail.

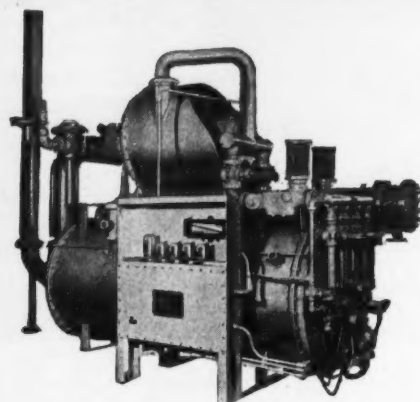
Underwriters' Laboratories listed for hazardous atmospheres: Class I, Groups C and D; Class II, Groups F and G. This includes vapors of ethyl ether, gasoline, petroleum, alcohol, acetone, lacquer solvent, natural gas and atmospheres charged with grain or coal dust. Rated: 15 amperes, 125, 250, or 460 volts a-c.

For further information write to experienced MICRO SWITCH engineers at one of the addresses below.



BRANCH OFFICES: Chicago • New York • Boston • Cleveland • Los Angeles
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When inquiring check CP 9624 on handy form, pgs. 2-3



Kemp Model 20 MIHE Inert Gas producer. 20,000 cfh discharged at 10" W.C. Completely wired and ready for immediate connection to utilities.

How does that compare with what you are now paying for inert gas?

The difference tells you how long it will take to pay for a Kemp Inert Gas producer out of savings.

And indeed, there will be savings!

Not only in cost of gas, but in freedom from wrestling with CO₂ bottles . . . in the opportunity to use inerts as generously as you wish . . . in the ability to pipe it throughout the plant for use in blanketing, agitation, fire-protection . . . in the ability to turn it on and off at need with production cost per Mcf uniform at high or low demand.

Send for a Kemp engineer . . . there's one near you who knows your problems and how Kemp can help save money for you.

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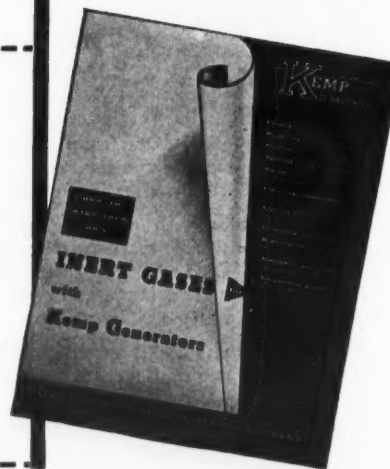
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Company

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City..... Zone.....

State BCPP-4



When inquiring check CP 9625 on handy form, pgs. 2-3

Briefs . . .

Petroleum and coal as energy sources

A comparison of energy production, from various sources from 1900 to 1947, is tabulated in this 2-page article. Total produced energy, with fluctuations, is graphed. Index of wholesale commodity prices and comparison of buying power of one dollar for one million Btu of coal, gas and fuel oil are shown in graphs for the years 1926 to 1948. Illustrated with 2 tables and 4 figures. ("Petroleum Processing", March, 1949, page 264)

Fluidization nomenclature

Expansion of the application of the solids fluidization technique makes desirable a standard, well understood method for expressing data and results.

A recognized group of workers in this field has proposed certain letter symbols and definitions which are thought to be desirable. ("Chemical and Engineering News", March 7, 1949, page 686)

Industrial cyclone furnace

First cyclone furnaces to be installed by industry are described in 4-page article with 6 figures and 2 tables. Discusses extreme combustion rates, pressurization of entire furnace, operation of cyclone, conditioning of coal, expected performance data, disposal of ash as slag, superheat control and amount of excess air.

These furnaces have been in use in public utility generating stations for many years and have an excellent performance record. ("Power", March, 1949, page 72)

Placement and development of technical personnel

A panel discussion of subjects in the placement and development of technical personnel is presented in 2 subsequent issues of this publication. Careful reading is recommended to chemical engineers seeking employment, and to companies requiring chemical engineers. Opinions come from men who cover a wide field in the chemical processing industry. ("Chemical Engineering Progress", Jan.-Feb., 1949)

Treatment of leather

A laboratory method for treating leathers with various synthetic resins is described. Objective is to impart desirable characteristics to the treated leather, such as abrasion resistance and resistance to water permeability. Effects vary with leathers of different tannage.

Results are recorded graphically and tabulated. Consists of 9 pages, 7 tables and 8 figures. ("Journal of Research, U. S. Bureau of Standards", Jan. 1949, page 63)

Selection of heat exchangers

Common types of heat exchangers are illustrated in 5-page article. Comments on importance of effective heat differential in exchanger operation. Cites reasons for caution in applying published rates for heat exchange when designing exchanger equipment. Discusses mechanical fea-

CHEMICAL PROCESSING Preview

from contemporary publications

Here's a quick look at interesting articles, appearing in other publications . . . as selected by Technical Editor, H. McCormack

tures of design which are believed to be most important in continuous, effective operation of exchangers. Illustrated with 6 figures. ("Petroleum Refiner", Feb. 1949, pg. 150)

Solexol process in refining and fractionating oils

Data and discussion are presented on application of solexol process to menhaden, sardine, soybean, linseed, cod liver and tall oils. Fundamentals of operation are cited. Various details of operation, as applied to specific oils, are stated.

Results obtained in fractionation of enumerated oils are tabulated, and 2 methods for fractionating are shown for most oils. Characteristics of fractions as to color, iodine number, free fatty acids, saponification number, etc., are stated. Vitamin A potency of various fractions are included in some instances. 8 pages, 13 figures and 11 tables. ("Industrial & Engineering Chemistry", Feb. 1949, page 280)

Welding saves 20% steel in "cat-cracker" project

Application of electric welding in fabricating steel structures pertaining to a "cat-cracking" unit is described in this 6-page article.

Comparisons are made between customary construction methods and this one, as to weight of steel used, man-hours for construction, man-hours in making necessary drawings for fabrication and total costs. Includes 6 photos to show specific construction details. ("Petroleum Processing", Feb. 1949, page 139)

Stress relief in welded vessels

Wide-spread adoption of welding steel equipment suggests the desirability of a method for stress relief after welding. Article describes a method which has been found satisfactory and which can be used with little expense for necessary equipment. Can be used anywhere. Necessary equipment, its installation and use, is described.

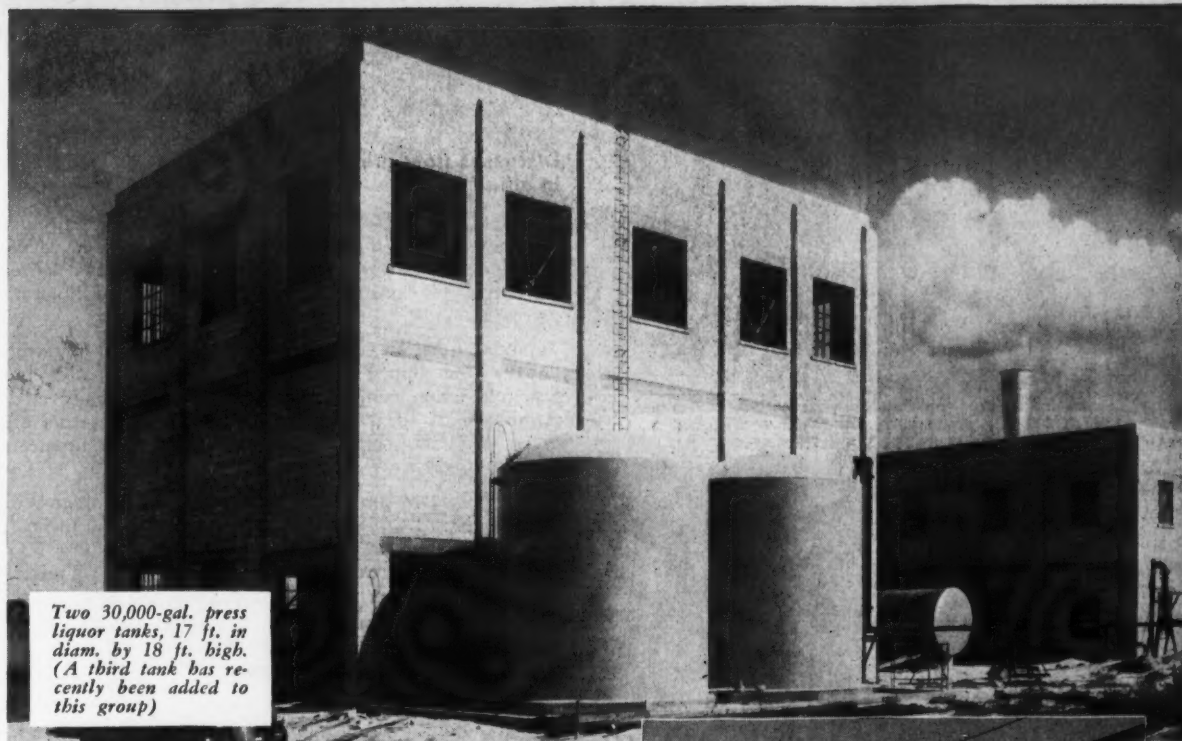
Calculations for necessary heating element or elements, and the required energy input, are discussed and illustrated by an example. Possible power sources are cited and commented on. Consists of 3 pages, 2 photos, 1 figure, 1 table, and calculations. ("Petroleum Refiner", Feb. 1949, page 109)

Process-vessel heat insulation: expansion problems

Comments are made on damage to insulating materials, and consequent needs for replacement, when too little attention is devoted to expansion in the use of insulated equipment. Figures show where failures are likely to occur, and how insulation is applied to obviate them.

Most satisfactory methods for applying insulation to vessels of varied sizes and shapes are illustrated and discussed. 5 pages, 5 tables and 16 figures. ("Petroleum Refiner", Feb. 1949, page 131)

APRIL, 1949

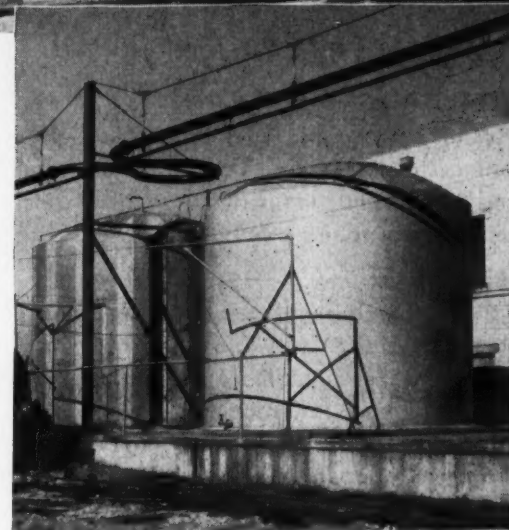


Two 30,000-gal. press liquor tanks, 17 ft. in diam. by 18 ft. high. (A third tank has recently been added to this group)

Welded steel tanks store citrus by-products

The Florida Citrus Canners Cooperative of Lake Wales, Florida, operates a plant which processes about 4,000,000 boxes of fruit into canned juices, cans of fruit sections and concentrates. After extracting or preparing the sections of fruit, there remain about 650 tons of peelings and other waste after each day's run. This is processed into two types of valuable by-products. The waste material is chopped and pressed dry to make a dry pulp feed for cattle, and the "press liquor" which is squeezed out by the presses is concentrated by evaporation into Citrus Final Syrup, used as a sweetening in cattle feed, and as fruit spirits in brandies and cordials.

Horton flat-bottom tanks are used in the processing to store the "press liquor" and the final syrup. This is a typical example of the many uses found for these economically-maintained welded steel tanks. If you have similar storage needs, ask our nearest office for quotations.



The two 22-ft. diam. by 18-ft. tanks shown directly above each have a capacity of 50,000 gallons, and are used to store final syrup at the Florida Citrus Canner's Cooperative plant, Lake Wales, Fla. The plant produces about 8,000 tons of citrus pulp cattle feed, and 6,000 tons of Citrus Final Syrup as by-products of 4,000,000 boxes of fresh fruit.



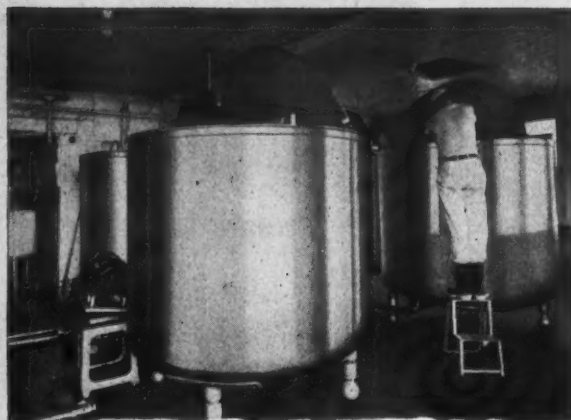
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When inquiring check CP 9626 on handy form, pgs. 2-3



PHOTOGRAPH ABOVE SHOWS VAN-MADE 600 GALLON TANK OF 12 GAUGE STAINLESS STEEL



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When inquiring check CP 9627 on handy form, pgs. 2-3

Page 54

New Literature

Discusses flow measurement in small piping

Difficulties in measuring flow of gases or liquids through pipe sizes of less than 2" are discussed in 6-page paper. Equations for calculating flow under such circumstances are derived, and instructions given for plotting calibration curves.

Typical calibration curves, correction factors for use with flowmeters equipped with square root charts or scales, and flow integration using calibrated flow elements are covered. Arrangements for calibrating primary flow elements are given, and differential pressure manometer requirements are discussed.

"Flow Measurement of Gases and Liquids Through Primary Elements in Pipe Sizes of less than Two Inches", issued by Taylor Instrument Companies, Dept. CP, P.O. Box No. 110, Rochester 1, New York. When inquiring specify CP 9628 on handy form, pages 2 and 3.

Steam jet exhausters operate under varying pressures

Screw spindle with needle-point regulator facilitates desired vacuum and air handling capacities with minimum steam consumption and with widely varying steam pressures, it is reported. 16-page, 3-color bulletin describes line of steam jet exhausters for pump priming, evacuating, cleaning, and transporting and agitating liquids and gases. Colored diagrams illustrate typical applications. Construction, operation, sizes, dimensions, and capacities included.

Bul. 4-E, issued by Schutte and Koerting Co., Dept. CP, 12th and Thompson Sts., Philadelphia 22, Pa. When inquiring specify CP 9629 on handy form, pages 2 and 3.

Describes all types, ranges of vacuum, pressure gauges

Many photographs and schematic diagrams illustrate operating principles of pressure indication and control instruments. Included in 32-page, 2-color catalog are differential pressure and level recorders, liquid level measurement instruments for both open and closed vessels, furnace pressure controllers, high vacuum gauges, precision indicators, and high pressure gauges for use up to 10,000 psig.

Also included are control components, electrical and air-operated; chart drives, mechanical and electrical senders and receivers. Specifications, applications aid selection of desired instrumentation.

Cat. 7000, issued by Brown Instrument Co., Dept. CP, Wayne Ave. and Manheim St., Philadelphia 44, Pa. When inquiring specify CP 9630 on handy form, pages 2 and 3.

Low-heat welds exhibit density, 80,000 psi tensile strength

Low-heat gas welding rod featuring bonding temperature of 1000-1200°F, tensile strength of 80,000 psi is described in 2-color bulletin. It is reported to have low frictional coefficient characteristic of bronze welds, with greater

density and a hardness of Rockwell C-22. Excellent machinability, adherence to most metals, except aluminum and magnesium, are stated to be among other desirable qualities.

January issue "Eutectic Welder", issued by Eutectic Welding Alloys Corp., Dept. CP, 40 Worth St., New York 13, N. Y. When inquiring specify CP 9631 on handy form, pages 2 and 3.

Lists pulley drives, illustrates designing procedure

4-page, 2-color catalog section pictures and describes v-belt pulley drives. Belt numbers, sizes, and pitch lengths are included, as is a section giving suggested step-by-step procedure for designing drives.

Cat. Sec. 2170, issued by The B. F. Goodrich Co., Dept. Akron, Ohio. When inquiring specify CP 9632 on handy form, pages 2 and 3.

Differential pressure changes of 0.1% of full scale noted

Differential pressure transmitters sensitive to changes of less than 0.1% of full scale are described in an 8-page, 3-color bulletin. Other features are linear response, over-range protection, and speed of response. The system is entirely pneumatic, thus can be installed in any position and is free from explosion hazard.

Gives specifications and ranges of 20 models. Also pictures and describes pilot valves and controllers. Bul. 102, issued by Moore Products Co., Dept. CP, H and Lycoming Sts., Philadelphia 24, Pa. When inquiring specify CP 9633 on handy form, pages 2 and 3.

Solves steam trap problems in 36 pages

"Solving Steam Trap Problems" is title of 36-page text. Selection of steam traps for various applications is comprehensively discussed. Tables for determining trap requirements of unit heaters, steam jacketed kettles, autoclaves, submerged surfaces, air and gas purifiers, etc., are provided. Notes on installation, operation and maintenance are given.

Specifications, installation photos of maker's line of steam traps, air release valves, and accessories are included. Issued by V. D. Anderson Co., Dept. CP, 1935 W. 26th St., Cleveland 2, Ohio. When inquiring specify CP 9634 on handy form, pages 2 and 3.

Selection, calibration of vacuum gauges

High vacuum apparatus is discussed in 8-page bulletin. Article on measurement of low pressures covers problems of gauge selection and calibration; includes conversion table to microns from other units, discusses best ranges of different types of gauges. Preferable operating conditions and sources of error for different gauge types are described.

Other articles describe vacuum bell for gradient metal-

CHEMICAL PROCESSING Preview

coating of glass, picture glass-blowing of three-stage high-vacuum pumps, and discuss Swedish molecular pump now available.

"Current Data on High Vacuum Apparatus", Winter, 1949, issued by Distillation Products, Inc., Dept. CP, 755 Ridge Road West, Rochester 13, N. Y. When inquiring specify CP 9635 on handy form, pages 2 and 3.

Metallizing accomplished without roughening or undercutting

New spraying technique fuses sprayed metal to base material without preliminary roughening or undercutting of the surface; it is reported in 4-page bulletin. Mechanical repairs, corrosion and contamination protection, and metallizing to resist high temperatures, are covered. Machine shop and field service facilities are described.

Bul. M-8000, issued by Metalweld, Inc., Dept. CP, 26th & Hunting Park Ave., Philadelphia 29, Pa. When inquiring specify CP 9636 on handy form, pages 2 and 3.

Electric eye counts 1000 items per min.

News letter describes developments in photo-electric devices and uses. Miniature photocell, 1/4" in diameter, is discussed; conductive rubber, conductive cement and paint are mentioned. Uses of photocells in warning systems, lighting controls, etc., included.

"Photobell News Letter", issued by Photobell Co., Dept. CP, 116 Nassau St., New York 7, N. Y. When inquiring specify CP 9637 on handy form, pages 2 and 3.

Automatic hot gas defroster precools refrigerant

Automatic hot gas defrosting system is described in 4-color, 4-page bulletin. Special feature evaporates slugs of liquid refrigerant before they reach compressor and precools refrigerant on way to evaporator.

Bul. DF-100, issued by Patterson-Kelley Co., Inc., Dept. CP, 101 Park Ave., New York 17, N. Y. When inquiring specify CP 9638 on handy form, pages 2 and 3.

Wall chart gives precautions for safe chlorine handling and use

Handy, linen-backed 18 x 23" wall chart carries safety precautions to be observed in handling and using chlorine. Storage instructions, first aid and emergency measures are included.

"Chlorine Safety Wall Chart", issued by Hooker Electrochemical Co., Dept. CP, Niagara Falls, New York. When inquiring specify CP 9639 on handy form, pages 2 and 3.

Describes concave-convex grinding media

4-page, 2-color bulletin describes grinding media having cupped and spherical surfaces of same radii. Specifications, pictures, and description of rolling, impact, and attrition grinding functions of media are included.

Bul. 07B7092, issued by Allis-Chalmers, Dept. CP, Milwaukee 1, Wisconsin. When inquiring specify CP 9640 on handy form, pages 2 and 3.

APRIL, 1949



TAKE A CLOSE LOOK at the Goetze heat exchanger gasket shown above. Note the absence of cracks on outside corners . . . of wrinkles on inside corners . . . the uniform width of the ribs . . . the generous overlap of the metal jacket.

Attention to such important details is typical of the kind of care that goes into the forming of these custom-made gaskets. It is the secret of their dependable service—why you can count on them to stay on the job indefinitely without leaks

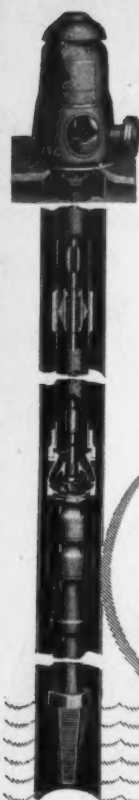
or blowouts. And it's the reason they pay off in terms of less down-time and in the savings that result when gaskets *don't* have to be replaced at frequent intervals.

You can have Goetze heat exchanger gaskets made in any size or shape. Estimates and recommendations will be furnished promptly on request. Write Johns-Manville, Box 290, New York 16, N. Y.



Johns-Manville Goetze Gaskets

When inquiring check CP 9641 on handy form, pgs. 2-3



REDUCE YOUR WATER COSTS!

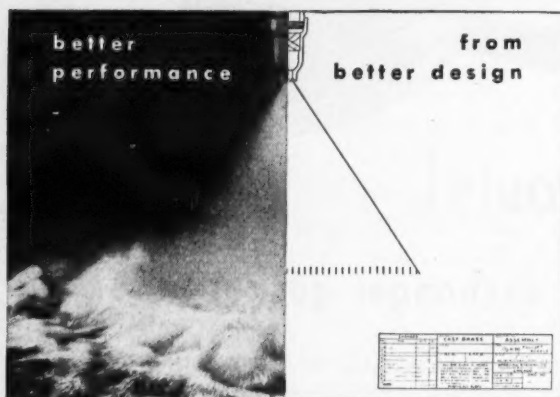
Investigate the cost-saving advantages of Deming Turbine Pumps designed for almost any depth of well. Hundreds of installations show substantial savings compared with municipal water costs.

Water lubricated cutless rubber bearings eliminate contamination of water by oil or grease as none is required. Multi-stage vertical construction takes minimum space for pump and contributes to high efficiency. Different types of heads meet almost all power drive conditions. Capacities range up to 3000 g.p.m.

BULLETIN 4700-B
Send for this 20-page, illustrated bulletin which gives complete details about Deming Deep Well Turbine Pumps.
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PUMPS AND WATER SYSTEMS

When inquiring check CP 9642 on handy form, pgs. 2-3



SPRAYING SYSTEMS SPRAY NOZZLES



Why not investigate what Spraying Systems' better design can mean in spray nozzle performance? A highly specialized division of hydraulic engineering, spray nozzle design and manufacture has been the sole business of Spraying Systems Co. since its beginning. For a demonstration of how completely we can serve your needs, write for General Catalog No. 22 or Pneumatic Atomizing Catalog No. 23.

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When inquiring check CP 9643 on handy form, pgs. 2-3

Page 56

NEW LITERATURE

CORRECTION

The top line of a New Literature review on page 59 in the February, 1949, issue of CHEMICAL PROCESSING Preview was lost during printing. This article, headed "Reviews properties of stainless steel," described literature issued by Tempil Corporation. First sentence should read "Stainless Steel, A Review of Properties is 2-page summary on high-chromium and high-chromium-high-nickel steels."

Thermocouple and pyrometer accessories fill 56 pages

Fifty-six pages of detailed information on thermocouples, protection tubes and other pyrometer accessories include an engineering data section. This covers factors affecting thermocouple life, corrosion and poisoning, thermocouple reproducibility and insulation, and factors aiding selection of proper thermocouple and protection tube for specific applications.

Illustrated catalog section is conveniently indexed, listing complete line of thermocouples, thermocouple wire, protection tubes, insulators, extension wire, etc. Calibration data for commonly used base-metal and rare-metal thermocouples are tabulated. Bul. P1238, issued by The Bristol Company, Dept. CP, Waterbury, Conn. When inquiring specify CP 9644 on handy form, pages 2 and 3.

Pharmaceutical, cosmetic, dye uses indicated by properties

Properties, uses, and reactions of *beta*-resorcylic acid are covered in technical bulletin. Compound undergoes reactions typical of phenolic compounds and of aromatic acids. Properties indicate potential use in fields of pharmaceuticals, photographic chemicals, cosmetics and dye-stuffs.

Bul. C-8-131, issued by Chemical Division, Koppers Co., Inc., Dept. CP, Pittsburgh 19, Pa. When inquiring specify CP 9645 on handy form, pages 2 and 3.

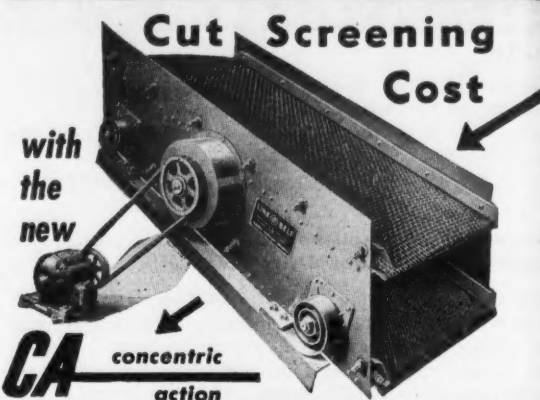
Solvent recovery systems described, pictured

Activated carbon, absorption tower, and condensation-refrigeration systems are described and applications are noted in 12-page, 2-color bulletin. Installation photographs, schematic diagrams are included, as is a description of vapor-collecting equipment and its application to solvent vapor recovery.

Bul. 2260, issued by Chemical Plants Division, Blaw-Knox Construction Co., Dept. CP, 321 Penn. Ave., Pittsburgh, Pa. When inquiring specify CP 9646 on handy form, pages 2 and 3.

Welding projects, practices in post-war years

Arc welding progress in post-war years is covered in abstracts of 82 papers on welded designs. 1000-page text emphasizes projects produced and in operation, with a liberal presentation of cost data included to facilitate comparison of methods. Welding used on production items



LINK-BELT VIBRATING SCREEN

There's nothing like it the way the new Link-Belt Concentric Action screen cuts cost and hikes capacity. It has extreme smoothness in starting and stopping; superior efficiency on overloads; increased amplitude at high speeds; unobstructed screening surface. Easily inspected, serviced and adjusted. Can be used for both medium and heavy duty sizing of a large variety of materials as well as for scalping, dewatering or rinsing operations.

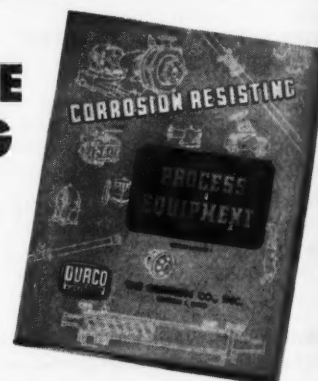
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When inquiring check CP 9647 on handy form, pgs. 2-3

Here's a COMPLETE CATALOG of Corrosive- Handling Equipment



New, 8-page,
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describes: — — —

36 TYPES OF EQUIPMENT —
Pumps, pipe, valves, fans, heat exchangers, etc., made of Durco corrosion-resisting alloys.

DURCO CORROSION RESISTING ALLOYS —
Duricon, Durichlor, Durimet, Chlorimet, and Durco D-10, stating composition and physical and mechanical characteristics.

FEATURES of each type of equipment, **SIZES, CAPACITIES** and the **ALLOYS** in which it is available.

Write for your free copy today.
Ask for General Catalog "K."

DURCO Adv. 54-GM



THE DURICON CO., INC.
DAYTON 1, OHIO
Branch Offices in Principal Cities

When inquiring check CP 9648 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

NEW LITERATURE

rather than on single units is emphasized. Many papers describe application of welding directed to reduction of manufacturing costs as well as to improvement of quality.

"Design for Welding", edited by R. S. Green. Remit \$2 direct to The James F. Lincoln Arc Welding Foundation, Dept. CP, Cleveland 1, Ohio. When inquiring specify CP 9649 on handy form, pages 2 and 3.

Synthetic floor coating resists acids, alkalis

4-page, 2-color bulletin lists results of resistance tests given to synthetic polymer floor coating. It is reported that 1/16" film has excellent resistance to solvents, glycols, oils, fats, waxes, most acids, alkalis, salt solutions, chemical corrosives, etc.

"Synthetic Polymer Floor Coating Technical Data", issued by Rock-Tred Corp., Dept. CP, 629 W. Washington Blvd., Chicago 6, Illinois. When inquiring specify CP 9650 on handy form, pages 2 and 3.

Covers two refractories for use to 3000°F

A refractory designed for gun application in building new or repairing old linings is described in 2-color bulletin. Adaptable for trowel patching, it reportedly eliminates need for tamping or ramming. Another refractory designed for casting of special shapes with minimum shrinkage is covered. Both refractories are monolithic; are for service to 3000°F.

Bul. RC-22A, issued by Johns-Manville, Dept. CP, 22 East 40th St., New York 16, New York. When inquiring specify CP 9651 on handy form, pages 2 and 3.

Motor and turbine pump unit is compact and flexible

4-page, 2-color bulletin describes single-unit motor and turbine assembly. Specifications, sectional diagrams, pictures, performance table and selection table are included. The unit features replaceable heads and impellers, facilitating repairs and providing means for changing capacity; quiet operation, substitution of a mechanical seal in place of packing. 2 to 10 gpm cap.

Bul. 103, issued by Roy E. Roth Co., Dept. CP, Rock Island, Illinois. When inquiring specify CP 9652 on handy form, pages 2 and 3.

Stray fields, resistance changes do not affect instruments

Line of indicators, recorders and controllers is covered in 40-page catalog. Explains featured balance system which gives high speed responses, makes circuit independent of stray fields or resistance changes. Leads can be lengthened or shortened, can run near furnaces or refrigerants; primary elements at widely varying distances can be connected to the same instrument. Specifications, installation photographs, technical data included.

Cat. ND46(1), issued by Leeds & Northrup Co., Dept. CP, 4934 Stenton Ave., Philadelphia 44, Pa. When inquiring specify CP 9653 on handy form, pages 2 and 3.

APRIL, 1949

PAPER MILL FELTS can be cleaned or conditioned faster with the aid of AEROSOL Wet-ting Agents, which speed up the penetra-tion of cleaning solution or water into the felts, assuring more thorough saturation.

WATER SOLUBLE STAINS can be removed in dry cleaning without danger of leaving an undesirable odor when an AEROSOL Wet-ting Agent in a small quantity of water is used in place of the usual solvent.

Where Speed means Economy or Increased Efficiency use **AEROSOL* WETTING AGENTS**

Speed is the keynote to economy and profits in many industries today. AEROSOL Wetting Agents meet the increasing demand for speed in a great variety of industrial applications in connection with water, oils and surface coatings—

- ... to increase spreading action
- ... to aid penetration
- ... to improve contact and thus aid adhesion
- ... to regulate characteristics of precipitates
- ... to increase the reaction rates between immiscible liquids

AEROSOL Wetting Agents have a great diversity of applications. A few of the fields in which they are being used are illustrated on this page. If you have processes in which thorough and rapid wetting is important, then one of these agents, designed to meet requirements under various industrial conditions, will apply.

Send today for a copy of our comprehensive booklet describing the characteristics and methods of application of the AEROSOL Wetting Agents.

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AN EXCELLENT GLASS CLEAN-ING preparation can be made by dissolving an AEROSOL Wetting Agent in water or in water and a solvent. Such solutions have proved highly effective in cleaning telescopic mirrors prior to aluminizing.

DISPERSION OF PIG-MENTS in paints, lac-quers, enamels and printing inks can fre-quently be improved through the use of AEROSOL Wetting Agents, depending on conditions and the re-sults desired.



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When inquiring check CP 9654 on handy form, pgs. 2-3

Is yours a problem of
MIXING?



IF SO, let Sprout-Waldron be the first to come to your assistance.

Everyday we are matching customers' standard and specialized requirements for handling foods, dyes, plastics, chemicals—or what have you?

At Sprout-Waldron you will find a size, a type, and a construction for almost every mixing need.

There are verticals, horizontals, batch or continuous, rubber lined or glass lined . . . of wood, carbon steel, nickel steel, stainless steel—even Plexiglas.

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When inquiring check CP 9655 on handy form, pgs. 2-3

NEW LITERATURE

Instrument transformer guide lists 107 types, ratings

Detailed information on 107 types of standard instrument transformers is contained in fully illustrated 80-page booklet. Prices, ratings, and ASA accuracy classifications are given for indoor and outdoor use of potential, current, and portable transformers, and metering outfits. Tables giving mechanical and thermal limits of current transformers are included.

Booklet GEA-4626, issued by General Electric Co., Dept. CP, Schenectady 5, New York. When inquiring specify CP 9656 on handy form, pages 2 and 3.

Principles, legal aspects of trade mark selection

Legal aspects of trade mark selection; comprehensive list of trade-mark chemicals, textile specialties, plastics, elastomers, alloys, and allied products; and discussion of principles of trade mark selection are features of 510-page text.

"Trade Marks", by H. Bennett. Remit \$10 direct to Chemical Publishing Co., Inc., Dept. CP, 26 Court St., Brooklyn 2, N. Y. Or, when inquiring specify CP 9657 on handy form, pages 2 and 3.

Shows types, applications of bag-closing machines

16-page, 2-color bulletin describes component parts of filled bag closing machines. Specifications, installation photographs, charts to simplify selection of desired machines, and description of types of closure are included. Sewing heads, columns, tables, conveyors, and accessories are interchangeable; it is reported that some combinations will meet any production requirement.

Bul. 200, issued by Union Special Machine Co., Dept. CP, 442 N. Franklin St., Chicago 10, Ill. When inquiring specify CP 9658 on handy form, pages 2 and 3.

Ball bearing advantages applied to linear-motion bushings

Ball bushings which substitute linear ball bearings for linear sliding friction or wheel-and-track arrangements on reciprocating parts are described in 12-page, 2-color catalog. Ball-recirculation principle, seals and dust boots, installation data, mounting arrangements, load capacities and calculation of life expectancy are covered. Specifications are included.

January 1 issue of "Ball Bushings," issued by Thomson Industries, Inc., Dept. CP, Manhasset, N. Y. When inquiring specify CP 9659 on handy form, pages 2 and 3.

Quick, on-the-line de-scaling of heat exchanger tubes

Specially developed mechanical cleaners for de-scaling heat exchanger tubes are discussed in a 7-page paper. High speed, direct drive, scavenging, drill type cleaners are designed to de-scale tubing without moving exchanger. Case histories report that in some cases retubing is the only alternative to mechanical de-fouling.

Paper 48-A-114, issued by Thomas C. Wilson, Inc., Dept.



How To Prevent 'Skin Trouble'

(on Tanks,—Metal-Work)

Frequent costly maintenance, and even failures, can result where metal exteriors are not adequately protected from corrosive fumes. A tank's lining may be 100% corrosion-proof while its shell is afflicted with corrosive 'skin trouble'! Pyroflex Lacquer protects your tanks and metal-work with a tough surface coating that will withstand severe corrosive conditions.

Although it can be applied by brush or spray gun it is not an ordinary paint. Pyroflex Lacquer is an improved formulation of inert synthetic resins. It is impervious to acid, alkalies, oils, grease, alcohols, water and a variety of other corrosive agents.

Pyroflex Lacquer may be applied to metal, concrete, wood, or previously painted surfaces, no primer coat is required. It is available in colors: gray, clear, red, yellow, green, black, aluminum and white, and is shipped in one-, five- and fifty-gallon containers.

MAURICE A. KNIGHT
404 Kelly Ave., Akron 6, Ohio

**Pyroflex
Lacquer**

When inquiring check CP 9660 on handy form, pgs. 2-3

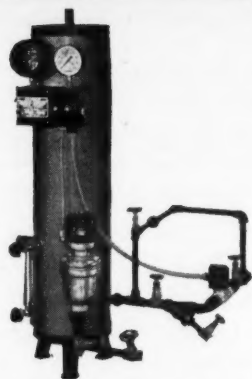
CHEMICAL PROCESSING Preview

Save 4 Ways

with
"QUIK-TEMP"
HEATING SYSTEM

Only "Quik-Temp"
Gives ALL of these
Guaranteed Results

- Increases Daily Output
- Faster Heat Transfer
- Saves Steam and Fuel
- Eliminates Steam Traps



QUIK-TEMP is the most practical answer to the problem of how to shorten processing time by stepping up the efficiency of existing machines. It increases the rate of steam heat transfer by eliminating steam traps. You profit through increased production and lower operating costs.

Proved in many industries, "Quik-Temp" provides a guaranteed minimum increase of 10% in production potential of any machine or group of machines to which it is applied. Machines heat up faster. Operating costs are reduced — in some instances up to 25%.

Get the facts—including data on possible savings.

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When inquiring check CP 9661
on handy form, pgs. 2-3

NEW LITERATURE

CP, Long Island City, New York. When inquiring specify CP 9662 on handy form, pages 2 and 3.

Shows solenoid valves in operation

Illustrated 12-page bulletin describes and diagrams large and small three-way and straightway valves. The large valves are solenoid air-pilot operated and the small are direct solenoid operated. Applications for use with water and low air pressures are described, and typical installation photographs and diagrams of the valves are included.

Bul. 311, issued by Ross Operating Valve Co., Dept. CP, 120 Golden Gate Ave., Detroit 3, Mich. When inquiring specify CP 9663 on handy form, pages 2 and 3.

Describes high-efficiency rotary vacuum pumps

Positive-action, single stage rotary vacuum pumps are covered in 6-page, 2-color bulletin. Operating principle of off-set rotor and gate assembly is discussed; construction and lubrication details are given. Efficiency curves, specifications, pump selection instructions, and installation photographs included.

Bul. 87, issued by Beach-Russ Co., Dept. CP, 50 Church St., New York 17, New York. When inquiring specify CP 9664 on handy form, pages 2 and 3.

40-page manual covers battery maintenance and repair

Instructions and engineering data on the maintenance and repair of motive-power batteries are given in 40-page handbook. Exploded views, maintenance directions, technical data, and illustrations and explanations of repairs are included.

"Battery Technology Handbook", issued by Gould Storage Battery Corp., Dept. CP, Trenton 7, New Jersey. When inquiring specify CP 9665 on handy form, pages 2 and 3.

Floor trucks available in 3 models, 7 sizes

Three models of floor trucks, available with choice of three types of wheels and choice of seven standard platform sizes, are illustrated in 4-page, 2-color booklet. Pictures and specifications included.

Bul. TR-848, issued by The Rapids-Standard Co., 342 Rapistan Building, Dept. T-129, Dept. CP, Grand Rapids 2, Mich. When inquiring specify CP 9666 on handy form, pages 2 and 3.

18 pages of refractory plastics, mortars and castables

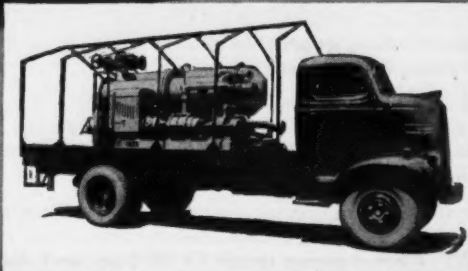
18-page bulletin on refractory materials outlines characteristics and gives typical applications. Specifications included. Refractory castables, plastics and mortars for use up to 3000°F are reviewed.

Bul. R-22, issued by Babcock & Wilcox, Dept. CP, 85 Liberty St., New York 6, New York. When inquiring specify CP 9667 on handy form, pages 2 and 3.

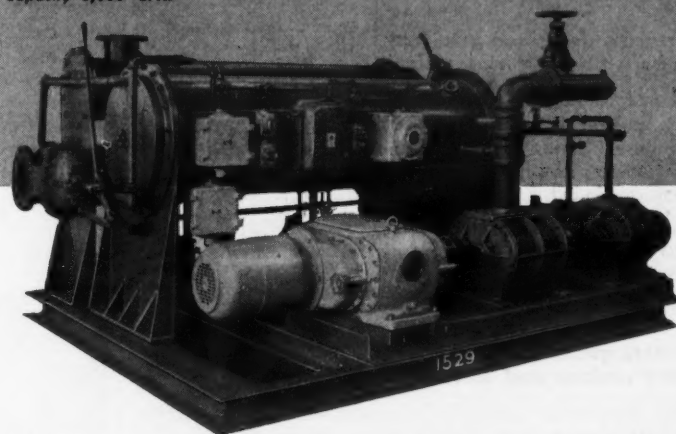
FOR PORTABLE OR STATIONARY PROTECTION...

R-C Inert Gas Generators

Portable R-C Inert Gas Generator, of 15,000 CFH capacity, mounted on pneumatic-tired truck.



Stationary R-C Inert Gas Generator mounted on steel base. Capacity 3,000 CFH.



You can reduce the hazards of processing, handling or storing inflammable gases or liquids with R-C Inert Gas Generators. They produce cheaply a mixture of nitrogen and carbon dioxide, using oil or gas as fuel. Both fixed and portable units have these outstanding advantages:

1. Large capacity in terms of weight and cost.
2. Low operating and maintenance cost.
3. Quick adjustments for complete combustion.
4. No adjustments, for same fuel, needed after shut-down.
5. Operation not affected by variation in back pressure.
6. Extremely quiet operation.

With capacities from 1,000 CFH to 50,000 CFH, R-C Inert Gas Generators provide quick, dependable protection, at low cost. They are equally efficient, also, for inert gas production for processing operations. Write for details in Bulletin 100-B-14.

ROOTS-CONNERSVILLE BLOWER CORPORATION

905 Richland Avenue, Connorsville, Indiana

Roots-Connorsville



BLOWERS • EXHAUSTERS • BOOSTERS • LIQUID AND VACUUM PUMPS • METERS • INERT GAS GENERATORS

★ ★ ONE OF THE DRESSER INDUSTRIES ★ ★

When inquiring check CP 9668 on handy form, pgs. 2-3

High-speed, high-capacity centrifugal sifters

Centrifugal sifters employing one, two, or three turbines are described in 2-color, 4-page bulletin. Installation photographs, specifications, and discussion of high-speed, high-capacity operation are included.

Bul. 65, issued by Abbe Engineering Co., Dept. CP, 50 Church St., New York 17, New York. When inquiring specify CP 9669 on handy form, pages 2 and 3.

Specification, quotation sheets on phosphate plasticizers

Tricresyl phosphate and cresylic acid are covered in specification and quotation sheets. Plasticizer emulsions are discussed; instructions for converting water-in-oil emulsions to oil-in-water type emulsions are included.

Specification and quotation sheets issued by Celanese Corp. of America, Dept. CP, 180 Madison Ave., New York 16, N. Y. When inquiring specify CP 9670 on handy form, pages 2 and 3.

Pictures, describes grid trays to hold filtering materials

Two-page, 4-color catalog gives dimensions, safe load data and other specifications of grid trays. Designed for handling filtering material such as Raschig Rings, clay in fractionating towers, "cat" baskets in petroleum refineries, chemicals in extractors, process equipment, pressure vessels.

Cat. G-48, issued by Kerlow Steel Flooring Co., Dept. CP, 220 Culver Avenue, Jersey City 5, New Jersey. When inquiring specify CP 9671 on handy form, pages 2 and 3.

Covers qualities, reactions of fatty amines and derivatives

The composition and physical constants of fatty amines and their derivatives, their synthesis, solubilities and handling are described in 18-page booklet. The reactions of the amines, properties of the derivatives, and cationic surface activity of these agents are thoroughly discussed. "The Chemistry of Fatty Amines", issued by Armour and Co., Dept. CP, 1355 W. 31st St., Chicago 9, Illinois. When inquiring specify CP 9672 on handy form, pages 2 and 3.

Federal insecticidal regulations interpreted in 54-page text

54-page text covers "Interpretations of Regulations for Enforcement of the Federal Insecticide, Fungicide, and Rodenticide Act." Economic poisons under the Act are defined; labeling, advertising, guaranty and analytical procedures permissible or required under the Act are amplified.

Issued by U. S. Dept. of Agriculture, Production and Marketing Administration, Washington 25, D.C.

Data and suggestions on dry grinding

Dry-grinding is comprehensively treated in 36-page bulletin. Operational suggestions and data, layout drawings,

Page 60

New Tube-Type Fan-Cooled

THE NEW ALLIS-CHALMERS tube-type totally-enclosed fan-cooled motor reduces maintenance to a point never before reached in totally-enclosed design.

This saving is made possible by the unique method of cooling. Straight tubes, running parallel to the shaft, surround the stator core. Internal fans circulate air within the motor to transfer heat to the tubes. An external fan moves outside air through the tubes to remove heat quickly and effectively. This heat exchanger is so efficient that the new Allis-Chalmers tube-type motor is only slightly larger than an open motor of the same rating.

MAINTENANCE MATERIALLY REDUCED

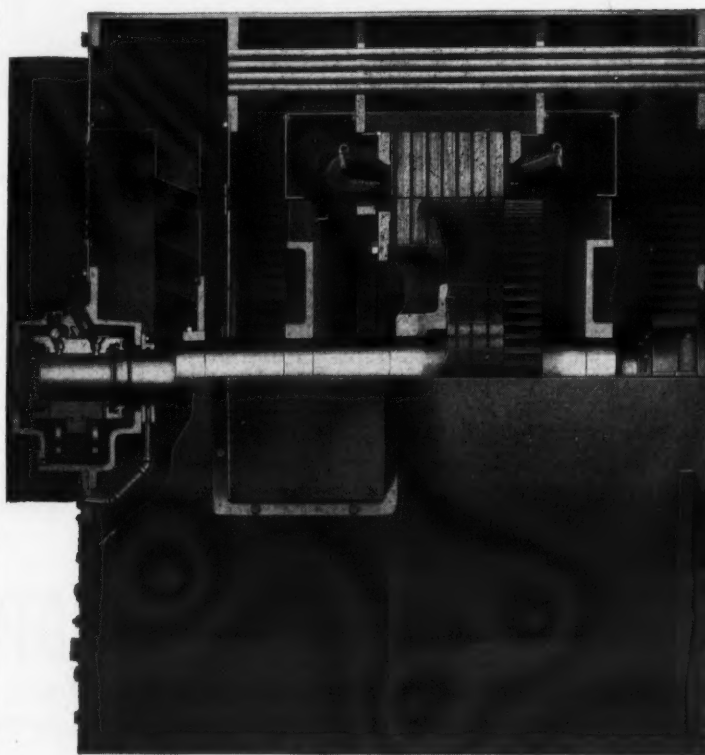
The new Allis-Chalmers tube-type motor is practically self-cleaning because the tubes are straight, the air passages unrestricted, and the cooling air flows at

sufficient speed to carry foreign matter out with it. Should unusually dirty air conditions make cleaning desirable, tubes can be swabbed out quickly and easily. Since all electrical parts are enclosed, this new motor can be installed indoors or out in any atmosphere.

COOLING EFFICIENCY PROVED

Three years of successful operation in the field have proved that the new Allis-Chalmers tube-type, totally-enclosed, fan-cooled motor can bring important savings to any industry faced with high motor maintenance costs due to dirty, corrosive or hazardous operating conditions. For information on this new motor contact your nearest A-C district office or write for bulletins 05B7150 and 51R7149.

ALLIS-CHALMERS, 1151A SO. 70 ST.
MILWAUKEE, WIS.

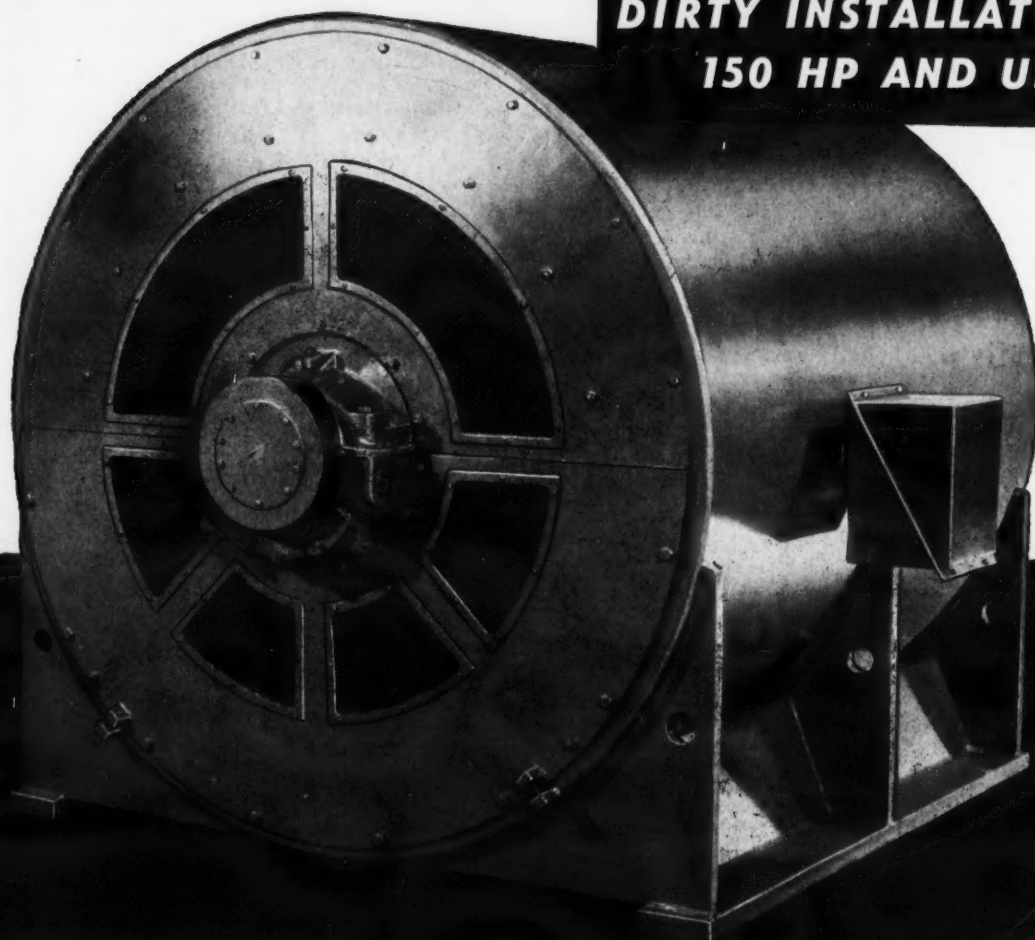


HOW TUBE-TYPE COOLING SYSTEM SAVES YOU MONEY ON MAINTENANCE

- 1. LARGE HEAT TRANSFER AREA** of tubes plus efficient air flow removes heat quickly.
- 2. STRAIGHT TUBES** do not, under normal conditions, clog or collect moisture and foreign matter.
- 3. INTERNAL FANS** keep enclosed air constantly circulating, assuring even cooling and fast heat dispersal.
- 4. EXTERNAL FAN** blows air through tubes to remove heat quickly and efficiently.
- 5. ALL ELECTRICAL PARTS ARE ENCLOSED.** Dirt cannot enter. May be installed in any location, indoors or out.

e Totally-Enclosed d Motors!

**MAINTENANCE CUT
SHARPLY ON OUTDOOR,
CORROSIVE AND
DIRTY INSTALLATIONS
150 HP AND UP**



ALLIS-CHALMERS

Pioneers in Power and Electrical Equipment From Generation Through Utilization

When inquiring check CP 9673 on handy form, pgs. 2-3

A 2643



NEW LITERATURE

construction details and specifications for conical mills are covered. Includes discussion of auxiliaries such as feeder systems and air classifiers.

Bul. 17-B, issued by Hardinge Co., Inc., Dept. CP, 240 Arch St., York, Pennsylvania. When inquiring specify CP 9674 on handy form, pages 2 and 3.

Truck over floor patching as soon as applied

A floor patching that will withstand heavy trucking immediately after application is reported. Folder illustrates simplicity of application, lists materials for acid and oil resistant flooring, floor surface hardening, leak stoppage, roof resurfacing.

"One-Two-Three", issue by Stonhard Co., Dept. CP, 500 Stonhard Bldg., 1306 Spring Garden St., Philadelphia 23, Pa. When inquiring specify CP 9675 on handy form, pages 2 and 3.

Maintains constant relative humidity

Atomizing nozzles for maintaining constant relative humidity in processing rooms, paper storage areas, etc., are covered in loose-leaf catalog. Other industrial spray nozzles, water cooling towers are included.

"Water Cooling Towers and Industrial Spray Nozzles," issued by Binks Mfg. Co., Dept. CP, 3122 Carroll Ave., Chicago 12, Ill. When inquiring specify CP 9676 on handy form, pages 2 and 3.

Reveals chemistry of dicyandiamide

Preparation, properties, reactions and specifications of dicyandiamide are discussed in 44-page text. Charts give reactions of related compounds. Uses as an intermediate, as a thinner, as a stabilizer, etc., are cited.

"Chemistry of Dicyandiamide", issued by American Cyanamid Co., Dept. CP, 30 Rockefeller Plaza, New York 20, N. Y. When inquiring specify CP 9677 on handy form, pages 2 and 3.

Simplifies selection of steam separators

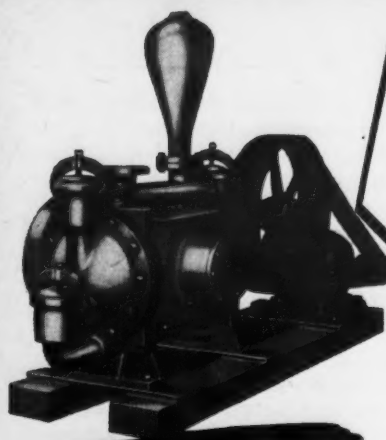
Selection of most efficient size and type of steam separator is simplified by chart which gives specifications and determines pressure drop. Included is method of determining pressure drop for an oil separator for an exhaust steam line.

Pressure drop chart is issued by Wright-Austin Company, Dept. CP, 3245 Wight St., Detroit 26, Mich. When inquiring specify CP 9678 on handy form, pages 2 and 3.

Describes new lab. apparatus

16-page, 2-color bulletin covers new laboratory equipment. Includes midjet furnaces, solution dispensers, rotators, microscopes, temperature controllers, condensers, etc.

7th issue, "What's New for the Laboratory", issued by Scientific Glass Apparatus Co., Dept. CP, Bloomfield, N. J. When inquiring specify CP 9679 on handy form, pages 2 and 3.



**FOR THOSE
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MATERIALS**

**Use the Pump
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- ✓ **Is Easier to Maintain**
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1 to 100 G.P.M. Write for Bulletin No. 126.

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**FILTER PRESSES • FILTER MEDIA
ENCLOSED PRESSURE FILTERS
CONTINUOUS THICKENERS
DIAPHRAGM PUMPS**

When inquiring check CP 9680 on handy form, pgs. 2-3

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CONTINUOUS PULP PRESS

**WITH J&C'S NEWEST
DEVELOPMENT
"Floating Cone"**

JACKSON & CHURCH COMPANY'S ZENITH CONTINUOUS PULP PRESS offers GREATER efficiency and GREATER profits... with the hydraulically-operated cake discharge port or "floating cone."

Long the finest dewaterer on the market Zenith's new 100% automatic operation assures CONSTANT UNIFORM discharge pressure at any pre-determined degree. Fingertip adjustment assures drier cake of uniform consistency.

These engineering triumphs... found only in Zenith Press... are available to paper pulp, cannery, corn starch, fish reduction, meat packing, glue, citrus waste drying and many other processes.

For further plant uses, for individual problems or for engineering or additional data, write Jackson & Church Company at Saginaw, Michigan.

**A PRODUCT OF
JACKSON & CHURCH COMPANY, SAGINAW, MICHIGAN**

"Work well done since '81"

When inquiring check CP 9681 on handy form, pgs. 2-3

NEW LITERATURE

Steel requirements of pressure vessels

Leaflet notes failures of massive welded structures, describes determination of "transition temperature" of steel and its importance in pressure vessel fabrication. Recommended welding procedures are outlined.

"Fabrication and Welding of Massive Structures", issued by Tempil Corp., Dept. CP, 132 W. 22nd St., New York 11, N. Y. When inquiring specify CP 9682 on handy form, pages 2 and 3.

Describes, pictures fan shutters

4-page, 2-color bulletin lists self-closing, manually operated, and motor operated fan shutters. Specifications of line of fan penthouses included.

Bul. SH-1, issued by L. J. Wing Mfg. Co., Dept. CP, 154 W. 14th St., N.Y. 11, N.Y. When inquiring specify CP 9683 on handy form, pages 2 and 3.

Overhead cranes simplify handling

Types, capacities, and installation photographs of cranes and monorails are given in 12-page, 2-color catalog. Switches, turntables, transfer cranes, swinging jibs are described.

"Cranes and Monorails", issued by Abell-Howe Co., Dept. CP, 53 W. Jackson Blvd., Chicago 4, Ill. When inquiring specify CP 9684 on handy form, pages 2 and 3.

Lists uses, properties of asphaltic mastics

40-page bulletin describes, specifies, notes uses of asphaltic mastics. Included are mastics for under-car protection, sand-filled and sandless sound deadeners, sealers, railway mastics, and rust inhibitors.

Bul 48-1, issued by Witco Chemical Co., Dept. CP, 435 N. Michigan Ave., Chicago 11, Ill. When inquiring specify CP 9685 on handy form, pages 2 and 3.

Describes repair of glass-lined vessels

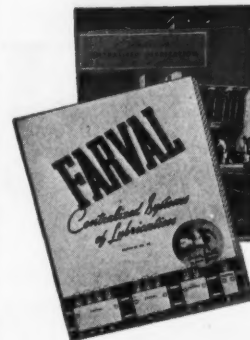
Methods of repairing various kinds of glass-lined and glass-coated equipment for corrosive service are summarized, in handy tabular form, in 4-page bulletin. Line of cements and directions for use are given.

Is this the solution to your lubrication problems, too?

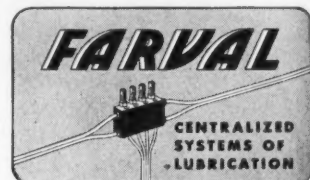
FOR more than 20 years, Farval has been saving money for users. Through efficient, dependable lubrication of machines and industrial equipment of all kinds, Farval saves 4 ways: It saves oiling labor, it saves lubricant, it reduces bearing expense, it eliminates down time.

The Farval System is a positive mechanical method of delivering oil or grease under pressure to a group of bearings from one Central Station, in exact quantities, as often as desired. It consists of a central pumping unit, two main supply lines and a measuring valve for each bearing.

Catalog No. 25 and "Case Studies" give you the facts and figures. The Farval Corporation, 3257 East 80th Street, Cleveland 4, Ohio.



Write for these
FREE bulletins



For personalized service:
Write or phone, John E. Millikan,
Cleveland exchange—VUcan 8-4660.

When inquiring check CP 9686 on handy form, pgs. 2-3

A NEW COOPER ALLOY SERVICE

**For Those Who
USE • DESIGN • SPECIFY
STAINLESS STEEL...**

- VALVES
- FITTINGS
- CASTINGS

It's yours for the asking!

● The first informative issue is just off the press. Send for it today.

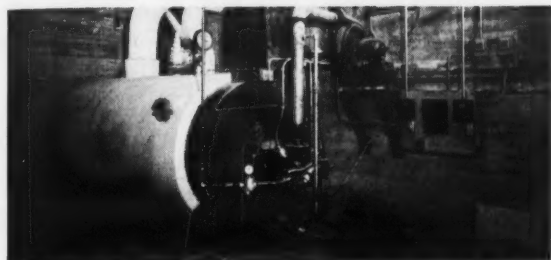
THE COOPER ALLOY FOUNDRY CO.
HILLSIDE, NEW JERSEY

THE WORLD'S LARGEST FOUNDRY DEVOTED EXCLUSIVELY TO THE CASTING OF STAINLESS STEEL

When inquiring check CP 9687 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

Presenting the **NEW** McKee **HORIZONTAL** Dowtherm Vaporizer



... offering the following outstanding advantages:

- 1 Low liquid level which facilitates the gravity return of condensate from heat using equipment.
- 2 All heating surfaces below liquid level, meaning greater economy.
- 3 Combustion within the vaporizer itself, so there is no heat loss through a furnace wall.
- 4 No flat surface with heat on the other side, on which a deposit can form and build up.

These are only a few of the advantages of this new unit and we invite your inquiries. Sizes from 300,000 BTU up through 2,000,000 BTU for temperatures up to 650° F. Write for information.

Eclipse Fuel Engineering Company
ROCKFORD ILLINOIS

McKee
Eclipse

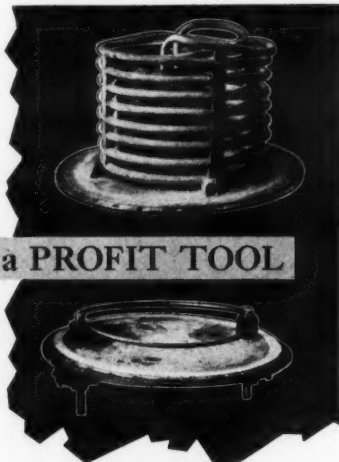
When inquiring check CP 9688 on handy form, pgs. 2-3

Tantalum is a PROFIT TOOL

Instance—
Fansteel Tantalum Coil
vs.
Lead Coil

Tantalum coil at right was designed for same work as base metal coil above—boiling mixture of sulphuric and hydrochloric acids.

Heating area of tantalum coil is only 1/18th that of base metal coil. Because tantalum withstands higher steam pressures, reaction time is shortened; production increased by one-third. The tantalum coil is permanent—with long freedom from repair or replacement. Write for book "The Metal Tantalum," Fansteel Metallurgical Corp., North Chicago, Illinois.



Among those who can use
Tantalum equipment profitably:

Users of chlorine and hydrochloric acid; producers of bromine or hydrobromic acid; users of bromine; users of nitric acid; some users of sulphuric acid who recover and reconcentrate the acid.

USE TANTALUM WITH ECONOMY for most acid solutions and corrosive gases or vapors, except HF, alkalis or substances containing free SO₂.

11402-A



Fansteel
Acid-Proof
TANTALUM

When inquiring check CP 9689 on handy form, pgs. 2-3

NEW LITERATURE

"Pointers" for making permanent repairs are listed, with helpful thumb-nail sketches. Bul. C-1, issued by Carboline Co., Dept. CP, 7603 Forsythe Blvd., St. Louis 5, Mo. When inquiring specify CP 9690 on handy form, pages 2 and 3.

Describes automatic battery charger

Motor-generator battery charger makes possible "on-the-spot" battery recharging by untrained personnel. Automatic control of charging current, charging time is described in 4-page, 2-color bulletin. Pictures, specifications included.

Bul. 221, issued by Electric Products Co., Dept. CP, 1725 Clarkstone Rd., Cleveland, Ohio. When inquiring specify CP 9691 on handy form, pages 2 and 3.

Water conditioners: types and uses

Chemicals for scale control, algae control, corrosion inhibitors, and chemicals for special purposes are covered in 8-page bulletin. Specifications and uses are included.

"Chemicals for Conditioning Aqueous Systems", issued by Wright Chemical Corp., Dept. CP, 627 Lake St., Chicago 6, Ill. When inquiring specify CP 9692 on handy form, pages 2 & 3.

Shows storage tank heating elements

Storage tanks and hot water generating heating elements are described in 8-page, 2-color bulletin. Capacity and dimension tables, installation instructions, and diagrams illustrating installation arrangements, are included.

Bul. 20, issued by Davis Engineering Corp., Dept. CP, Elizabeth, N. J. When inquiring specify CP 9693 on handy form, pages 2 and 3.

Pictures multiple-duct blowers, exhausters

Two 6-page catalogs include specifications, pictures of commercial and industrial fans. Covers multiple-port blowers and exhausters, duct booster fans, penthouse units, fans equipped with explosion-proof motors.

Catalogs 863 & 864, issued by Chelsea Fan & Blower Co., Inc., Dept. CP, 1206 Grove St., Irvington 11, N. J. When inquiring specify CP 9694 on handy form, pages 2 and 3.

For Quick Opening and Shut-Off For Unrestricted Flow of Air or Gases

INSTALL ROCKWELL SLIDE VALVES

Combines the full flow area features of the gate valve and the quick control movement of the stop-cock. Simple, strong, precision fitted of minimum number of parts of any metal. Made with thread connections for 1" to 10" pipe size and flanged connections for 4" to 20" pipe size; equipped with pull handle, hand lever, hand wheel, chain wheel and special automatic controls. Operating pressures to 25 p.s.i.—also special for higher pressures.

Low in first cost, compact, easy to install, Rockwell Slide Valves are used by the thousands in chemical processing, paper, textile, petroleum, metal working plants, utilities, etc., on air and gas lines for all kinds of equipment. They can do a "right" job in your plant.



Write for Bulletin 500

W. S. ROCKWELL COMPANY

220 ELIOT STREET • FAIRFIELD, CONN.

When inquiring check CP 9695 on handy form, pgs. 2-3

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This New
Fact-filled Book

It contains over 65 photos and diagrams, some full page size, showing our complete line of Stainless Steel Liquid Processing Equipment, numerous plant installations, design variations, application and performance data. Send for your free copy today.



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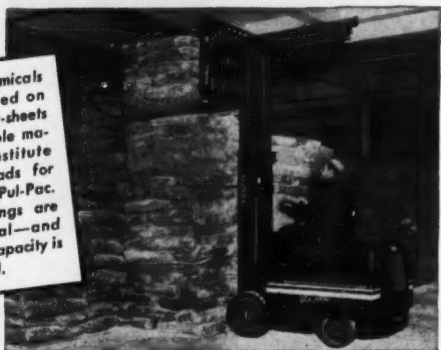
When inquiring check CP 9696 on handy form, pgs. 2-3

MATERIAL HANDLING *News*

Paper drums of pharmaceuticals at roof-truss level are immediately accessible to this Clark Electric battery-powered Car-loader. Increased storage capacity, faster handling make profitable good reading.



Bags of chemicals crossed-piled on load carrier-sheets of disposable material, constitute natural loads for the Clark Pul-Pac. Time savings are substantial—and storage capacity is multiplied.



TACKLE THOSE HANDLING COSTS!

It is one of the surest ways to protect and increase profits, say Industry's wisest counsellors; and one of the few remaining opportunities for appreciable savings. The Clark Method expands the capacity of any business by speeding up the flow of material. It increases storage capacity without plant expansion. It minimizes demurrage and costly accidents. It is good common-sense—and now is the time—to CONSULT CLARK.



WRITE FOR
*Material
Handling News*
—"must" reading.

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS AND INDUSTRIAL TOWING TRACTORS



INDUSTRIAL TRUCK DIV. CLARK EQUIPMENT COMPANY BATTLE CREEK 9, MICH.
REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE WORLD
AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

When inquiring check CP-9697 on handy form, pgs. 2-3

Page 64

Problem: Corrosive Wet Bulk Salt Cargos Solution: Stainless Steel Trailers

California olive processor finds van-type units
unscathed by months of grueling service

PROBLEM: Hauling wet bulk salt 200 miles to its plant at Lindsay, Calif., was a major trucking problem for Lindsay Ripe Olive Company, one of the largest ripe olive processing plants in the world.

Packing about 25% of all ripe olives packed in the US, Lindsay's trucking operation consists of hauling canned-ripe and barreled-green olives, also olive oil in glass bottles and steel drums, to their customers' warehouses. Considerable volume also is delivered to San Francisco docks for overseas shipment, and to rail pool car concerns for domestic movement.

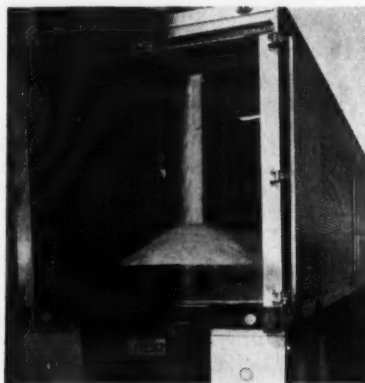
Large quantities of wet bulk salt from Leslie Salt Company must be hauled on return trips. Choice of proper corrosion-proof units suitable for these operations called for careful analysis and planning.

Solution: Investigation resulted in adopting a trial unit composed of Kenworth diesel tractor and two 35' Fruehauf stainless steel trailers. Van-type, the trailers are lined inside with plywood, treated with special waterproof material and sealed at all joints with stainless steel strips.

Floors are diamondette steel plating, welded into one unit and turned up at front and sides to form a shallow pan. This prevents salt brine from entering trailer walls. Special loading hatches, built into stainless steel roofs, facilitate loading from overhead bunkers at an average rate of 19 to 20 tons of wet salt in 20 minutes. This is later unloaded at the Lindsay plant with power-operated scoops.

At the Lindsay plant, one trailer is loaded with olives and olive oil while the other is connected to diesel tractor delivering to docks and wholesalers. Trailer returning nightly to the olive plant is dropped at the loading dock. Truck then picks up the other loaded trailer for another trip, thus making one round trip daily. This method allows a full 8-hr. day for unloading operations and loading trailer out again.

Results: Months of this corrosive service have had no ill effect on the stainless steel sides of the trailers, according to user. Ideally suited to hauling their bulk salt



Loading wet salt from overhead bunker into stainless steel trailer van. Months of hauling such corrosive cargos are said to have no ill effects on these trailers

cargos, they are also said to make a favorable impression on the company's customers.

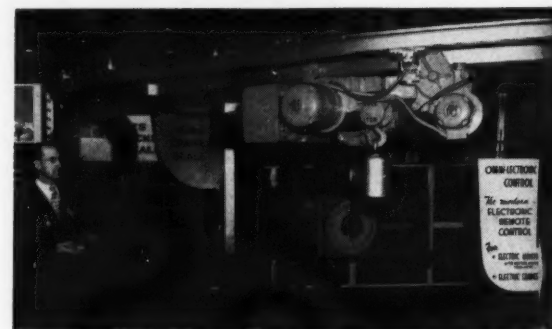
Source: Trailers employed in this operation are produced by Fruehauf Trailer Company, Dept. CP, 10941 Harper Ave., Detroit, Mich. . . . or for more information check CP 9698 on handy form, pages 2 and 3.

Operate hoists over wide plant area by electronic remote control . . .

transmitter plugs into plant power lines, receiver mounts on hoist, connects to contactors

Uses: Provides remote control of monorail electric hoists equipped with motor driven trolleys. (Also for electric cranes.) Used for operating hoists across expansive plant areas and along rails extending out over plant yards. It can be used also for operating hoists over the water from warehouse to ship.

Features: Long electric control cables are eliminated. An electronic transmitter plugged into plant power lines



Demonstration of electronically controlled hoist

supplying hoist (or crane) provides operating energy. A receiver mounted on the hoist and connected to the contactors operates the hoist.

This control is a remote electronic control device that replaces costly electric remote control systems. Portability of the transmitter (weight only 35½ lbs.) makes it possible to control operations from a vantage point that provides safer and closer supervision. The receiver is very easy to install. Transmitter operator is never in the path of travel of the hoisting unit. Because he does not travel with the hoist (or crane), the speed of travel can be increased.

Description: For hoist control there are five dynatron tubes, or, if desired, other type of audio frequency generators, each of which generates one audio control frequency to cause operation of one particular motion of the hoist.

CHEMICAL PROCESSING Preview

For example, the 1000-cycle signal causes the hoist to move forward, the 2000 cycle signal causes the hoist to move in reverse. The 3500 cycle signal causes the hoist-hook to move up, and a 6000 cycle signal results in downward movement of hoist-hook. Each of these control frequencies is turned "on" or "off" by means of three switches or pushbuttons, viz: (1) forward-reverse, (2) up-down, and (3) fast-slow.

Where a multiplicity of hoists are to be operated from a given location and from a single power supply, it becomes necessary to discriminate between the control of each hoist in order to operate each independently of the other.

This is done by (a) tuning hoist control unit to carriers of different frequencies, (b) using a crystal filter to give a narrow band pass at the carrier frequency chosen for a given hoist, (c) selecting audio frequencies for control of hoist motions to fall within such carrier band pass limits, and (d) providing carrier frequencies at the hoist control station for control of each of the hoists.

Both transmitter and receiver are compact. The first is 13" x 16 1/2" x 9 1/2"; the second 12" x 13 3/4" x 9 1/4".

This control is a development of Omnicon Corp., 2 Broadway, New York 4, N. Y.

Source: Electric hoists featuring this "Omni-Lectronic" control are a development of Yale & Towne Mfg. Co., Philadelphia, Pa. . . or for more information check CP 9699 on handy form, pages 2 and 3.

Skate-wheels, set in aluminum 'chute,' make fast, light-weight conveyor . . .

easily moved from job to job; 10 ball bearing wheels per ft; adjustable guard rails

Uses: Aluminum skate-wheel conveyors for increased portability, faster set-up time and speedier transfer of flat-bottom cartons or products not exceeding 150 lbs. each.

Features: Standard 10' section weighs only 26 lbs. Easily moved from job to job, and quickly set up in single



Skate-wheel conveyor speeds unloading of cartoned items. It's aluminum, and quickly set up

or multiple units. Weather and corrosion-resistant. Strong, smooth-riding and durable.

Description: Heavy-gauge aluminum with channel section sides and 10 ball bearing skate-wheels per ft., in 5 or 10' sections. Line includes 45 and 90° curve sections, with adjustable guide rails and end couplers. Sections are 11" wide.

Sure-footed, light-weight adjustable tripod supports in 5 sizes extending from 12 to 18", 18 to 30", 24 to 36", 30 to 48", 36 to 60". Special head holds sections firmly, eliminating need for the couplers.

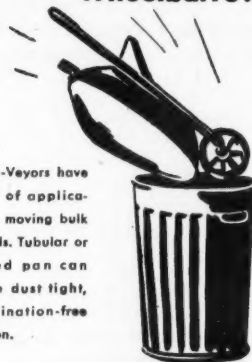
Source: Made by Haslett Chute and Conveyor Company, Dept. CP, Oaks, Pa. . . or for more information check CP 9700 on handy form, pages 2 and 3.

APRIL, 1949

How **AJAX** LO-VEYORS

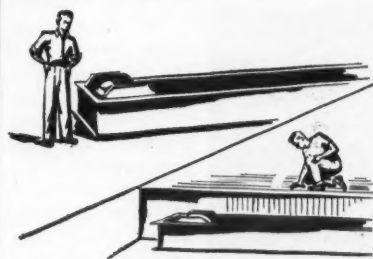
MAKE IT EASY TO CUT NON-PRODUCTIVE COSTS

Throw Away Your Wheelbarrows



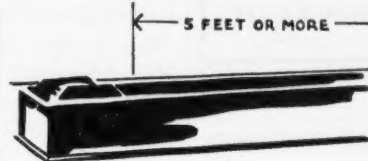
Ajax Lo-Veyors have dozens of applications in moving bulk materials. Tubular or covered pan can provide dust tight, contamination-free operation.

On, Above, or Below Floor



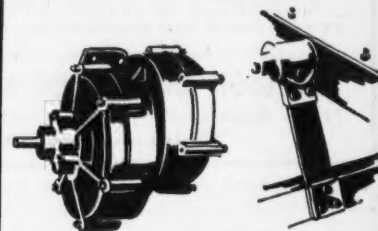
Can be installed under railroad tracks for unloading hopper cars . . . can be set on the floor . . . can be installed below floor level . . . can be suspended from wall or ceiling. Ajax Lo-Veyors are complete units delivered ready to use.

Short or Long Carries



You can use Ajax Lo-Veyors for moving material distances of 5 ft. and up. Material can be moved from one operation to the next . . . plant layouts can be rearranged

Unharmed by Abrasives



Ajax Shaler-Shaker drive unit is completely enclosed and runs in oil. Rubber bushed conveyor pan supports require no lubrication and are unharmed by abrasive materials. Ajax Lo-Veyor design eliminates conveyor belts, rollers, idler pulleys and bearings.

You need no longer think of conveying equipment as expensive. In fact, Ajax Lo-Veyors not only cut costs of handling bulk

material but are low in first cost and low in operating and maintenance costs.

Under present conditions, savings on handling material are one of your most important opportunities for cost reduction. Ajax Lo-Veyors are being used by the Who's Who of Industry for moving dry materials,—explosive and non-explosive. Their record of satisfaction is one of their strongest recommendations. Write telling us what you have to move.

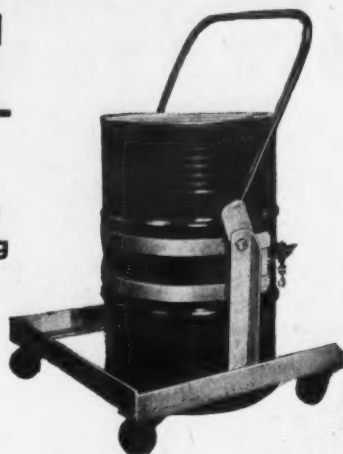
AJAX FLEXIBLE COUPLING CO. INC.

24 ENGLISH ST.
WESTFIELD, NEW YORK

When inquiring check CP 9701 on handy form, pgs. 2-3

DRUM HANDLING that's EASY and **Safe**

- Moving
 - Pouring
 - Emptying
 - Mixing
- Liquids
or
Powders



The Hodgson BARREL CART

The Hodgson Barrel Cart, developed by the Hodgson Engineering and Manufacturing Company, not only combines four operations in one piece of equipment but decreases injuries as well! No smashed feet or sprained backs when this versatile device is used, for the drum need never be hand-lifted. Write Hodgson for more detailed information.

Dealer's inquiries solicited

HODGSON ENGINEERING & MFG. CO.

7th & Rockford Phone 2-9419
Tulsa — Oklahoma

When inquiring check CP 9702 on handy form, pgs. 2-3

Now... BAKER offers a NEW LIGHTWEIGHT, Low-Cost Electric FORK TRUCK in the 2000 lb. Class



**Designed to meet a
specific demand in
material handling.**

Now Baker completes its line with the FRH-20, a light weight, low cost, highly maneuverable electric fork truck in the 2000 lb. field... This truck is ideal for plants where narrow aisles, limited floor capacity and low capacity elevators are factors and where loads can be limited to 2000 lbs., 36 inches long.

Write for complete information on the Baker Line of Light-Weight Fork Trucks — including the FQH-10 (1000 lb.), FQH-15 (1500 lb.) and FRH-20 (2000 lb.).

BAKER INDUSTRIAL TRUCK DIVISION
of The Baker-Raulang Company

2161 West 25th Street • Cleveland 13, Ohio

Baker INDUSTRIAL TRUCKS

When inquiring check CP 9703 on handy form, pgs. 2-3

Page 66

MATERIAL HANDLING

**Lifts 5'-long stack of cartons
weighing 1,700 lbs—uses
no pallets...**

"squeeze-grips" load with enough pressure to lift; abrasive strips on clamps prevent slipping

Uses: Carton-clamp for handling filled paper-board cartons by lift truck without need for pallets. Handles up to 1,700 lbs with Hyster "20" lift truck.

Features: Eliminates need for pallets.

Description: One of several optional devices for hydraulically-controlled Hyster

Load-Grab, an attachment which squeeze-grips its load with just enough side-pressure to lift without need for pallets.

Tines of clamp open to maximum spread of 59", and close to a minimum of 14". Abrasive strips on metal plates prevent slipping of load.

Other optional arms for Load-Grab include box-handling arms, drum-handling tines, rubber faced arms and conventional forks.

Source: Produced by Hyster Company, Dept. CP, Portland 8, Ore. . . or for more information check CP 9704 on handy form, pages 2 and 3.

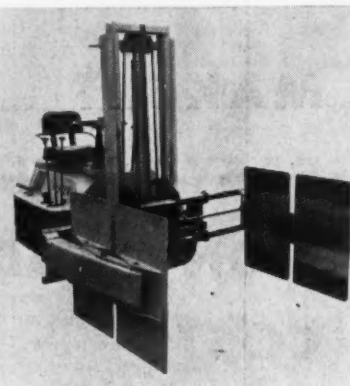
**Move products in constant
flow on overhead flexible
chain conveyor...**

quickly assembled, with corners adjusting to any degree within liberal limits

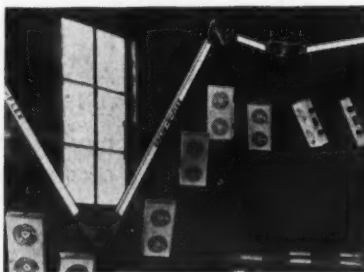
Uses: For installations where a constant flow of material is needed. In some installations these conveyor systems are used to move products through various processing steps of successive assembly operations.

Features: Component parts of this system are quickly bolted together to form a highly flexible and adjustable conveyor. Flexibility of all corners is a particular advantage. Each corner is adjustable to a very liberal degree. Lifetime grease-sealed ball bearings are used in each corner wheel which carries the chain and load. This conveyor is unusual in that its efficiency increases when the number of corners is increased.

Maintenance is low, as comparatively few moving parts are necessary. Well guarded by an enclosed design throughout, the conveyor offers the utmost in safety.



Carton clamp eliminates pallets



Flexible chain conveyor

BONE PEANUTS CHARCOAL CLAY
BORAX BARLEY PEPPER FLOUR FERTILIZER
MEAL TANKAGE YEAST

**CONVEY VERTICALLY
IN A TUBE**

**EASIER
CLEANER • SAFER
LESS SPACE
MORE ECONOMICAL
EFFICIENT**

SCREW-LIFTS save time, space and money. They elevate material to any practical height, and distribute it to storage bins or processing machines — in a totally enclosed contamination-free tube.

They are designed so there is no pressure, choking or degradation. They're in use in hundreds of installations, successfully handling many types of wet or dry bulk material.

Screw-Lift

Our Form No. M-500-2 gives full details and will enable you to outline your problem.

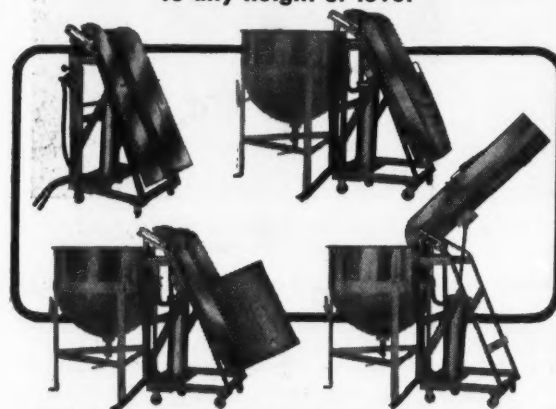
Write today!
A companion unit to our popular Screw-Veyor.

Screw Conveyor Corporation
699 HOFFMAN ST. HAMMOND, IND.
ENGINEERS MANUFACTURERS
TRADE MARK REG. U.S. PAT. OFF.

When inquiring check CP 9705 on handy form, pages 2-3

The New LEE HYDRAULIC MATERIAL HANDLER

**Smoothly dumps Liquids, Solids, Semi-Solids
to any height or level**



Designed to save time, labor and costly handling—the new LEE Hydraulic Material Handler is available in a wide range of standard and special sizes to fit any specific job application. Operates from ordinary city water pressure—requires no electrical connections, portable or stationary as the installation requires. Phone, wire or write for new Bulletin LM-13.

LEE METAL PRODUCTS CO., INC.
418 PINE STREET, PHILIPSBURG, PA.
ALL LEE KETTLES ARE MADE TO A.S.M.E. CODE

When inquiring check CP 9706 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview



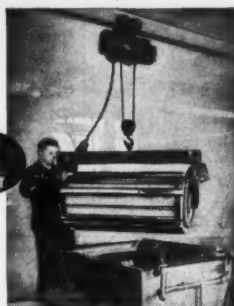
"Recovered 3 TIMES Its Cost
in 2 YEARS Use...
No Repairs or Replacements"

THE
Titan
ELECTRIC HOIST

*Unsolicited statement made by
a Michigan User, about a Titan
Hoist.

The Titan is a powerful little
hoist built with Big hoist features
including Cone Worm Drive,
Electric Brake, and Steel Wire
Hoisting Rope.

*You can get profits in the same
way with Titan Hoists handling
things in your plant.



Handling material through
the air saves floor space
for production.

Ask For
BULLETIN 801A

on the Titan Hoist;
also Bulletin 695
on light overhead
cranes.

THE DETROIT **Titan** ELECTRIC
HOIST
manufactured by

DETROIT HOIST & MACHINE CO.
8215 Morrow St. • Detroit 11, Mich.

When inquiring check CP 9707 on handy form, pgs. 2-3

"IT LIFTS AND LOWERS AS IT HAULS"

More Power to You!

with the L-S

"JACKSTACKER"
ELECTRIC TIERING TRUCK

Capacities to 4000 lbs. No Similar Truck has
4000 lb. cap. Load Always Over Wheels.

● To Move And Stack Unit Loads on all
skids and pallets. Weighs less than Fork
Trucks, takes less room. "JackStacker"
means **NARROWER AISLES**.

● All Controls in Handle Head — 2 speeds
forward, 2 reverse, lifting, lowering,
horn, lock, — instant, smooth-action electric
brake, constantly applied type. Controls
operate with handle any position. No need
to halt "JackStacker" to raise or lower
carriage. No similar truck has this advantage.

● Master Drive Unit, mounted
on articulated linkage, re-
placeable in 20 minutes.



4 Types
• Straddle
• Counter-
weight
• Open-end
Base
• Platform

Telescopic
Feature
Available
in all
Models.

Save money.
Write Today
4000 LB.
TELESCOPIC
STRADDLE TYPE

THE "MASTER" LINE of
Industrial Handling Equipment

LEWIS-SHEPARD PRODUCTS INC.
146 Walnut St., Watertown 72, Mass.

POWER FORK TRUCKS "JACKSTACKER" ELECTRIC TIERING TRUCKS ELECTRIC
JACKLIFT TRUCKS HYDRAULIC AND MECHANICAL HANDLIFT TRUCKS
JACKLIFTS STACKERS CRANES SKIDS PALLETS FLOOR TRUCKS

When inquiring check CP 9708 on handy form, pgs. 2-3

APRIL, 1949

MATERIAL HANDLING

Description: The system consists basically of conveyor
tubes (10 feet in length) through which chain rides; chain
and welded hooks, joist clips, drop brackets and adjustable
corners.

The drive unit, which is reversible, is self-contained to fit
into a corner of the system. A continuous duty motor and
control switch are included. An infinite variation of
speeds within a 3 to 1 ratio is obtained through an adjust-
able reducer. An electrically operated chain lubricator is
furnished for mounting on the drive unit or at a remote
point of the system if such location is more expedient.

The maximum load recommended per hook is 50 pounds
(when spaced on 12 inch centers). Greater loads can be
carried by using a spreader bar to distribute the load on
several hooks. Multiple drive units may be used on
extremely long systems. Atmospheric conditions such as
sand, lint or paint vapor are not injurious to these con-
veyors.

Source: Made by Chain-O-Flex Corp., Franklin Park,
Ill. and distributed exclusively by Industrial Equipment
Co., Dept. CP, 415 Ada St., Chicago 7, Ill. . . or for
more information check CP 9709 on handy form, pages
2 and 3.

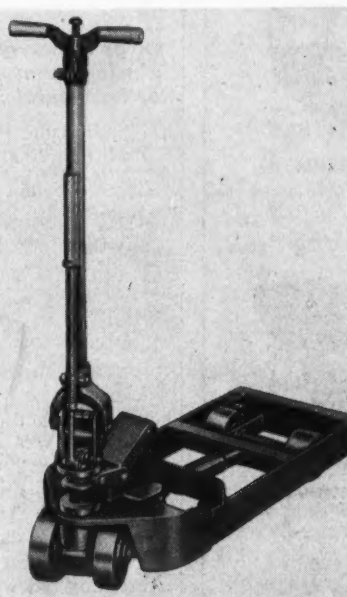
**Max. lifting torque at any angle
with free-swiveling, 360°
lift-truck handle . . .**

units in all standard sizes lift 1-ton to 2500-lb loads

Uses: "Single Stroke" mechanical lift trucks for moving
loads varying from a ton to 2500 lbs. Especially adaptable
to use in close quarters.

Features: Swiveling a full 360°, the handle is de-
signed to apply maximum lifting torque regardless of
angle; it is unnec-
essary for operator
to swing handle to
"out front" posi-
tion. Greater oper-
ating safety assured
by automatic anti-
kickback handle
release. Patented
design serves to
keep platform level
despite floor ob-
structions. Hydrau-
lic, shock-proof
lowering, plus
quick lift.

Description:
Front wheels,
widely spaced, are
mounted on manu-
facturer's Weldbilt
equalizer. Easy-ac-
tion foot-pedal
releases center
holding latch for
lowering.



"Single Stroke" lift truck

All-welded chassis.
Both narrow and
wide models furnished in all standard sizes and heights,
in capacities stated.

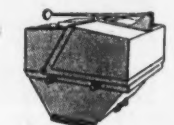
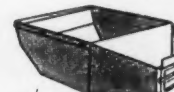
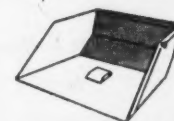
Source: West Bend Equipment Corporation, Dept. CP,
West Bend, Wis. . . or for more information check CP
9710 on handy form, pages 2 and 3.

Amazing **VARIETY of**
LOAD LUGGER USES



ONE Truck

- ★ handles liquids, solids
AND gases
- ★ loads, hauls AND dumps
- ★ has 30 bodies
- ★ reduces manpower
- ★ is always busy — never
waiting



There's no limit to the variety of
materials and the flexibility of op-
erations performed in a day's time
by the famous Brooks Load Lugger
System of materials handling. You
can think of 50 uses in your own
plant! Simple but sturdy hydraulic
hoists, easily mounted on one of
your trucks, works with 10 to 50
detachable truck bodies designed
for various materials. Permits
loading at collection points while
truck is always busy hoisting, haul-
ing, dumping. Interchangeable
bodies, 1 to 10 cu. yds. capacity.

**ONE USER SAVES
\$5000 PER TRUCK**

Load Lugger eliminates re-loading
into high truck bodies, is one-man
operated. Labor doesn't wait on
trucks nor trucks on men. Labor
savings alone reported by one user
amounted to \$5000 in the first 11
months. Write for catalog and
list of users in your vicinity.

BROOKS EQUIPMENT & MFG. CO.
606 Davenport Rd., Knoxville, Tenn.
LOAD LUGGER
TRADE MARK REGISTERED

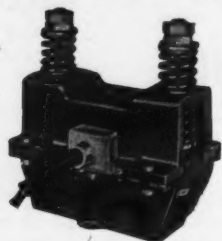


When inquiring check CP 9711 on handy form, pgs. 2-3

For Material-Handling "KNOW-HOW" call on **SYNTRON**

"Pulsating Magnet"

ELECTRIC VIBRATORS



**Keep Bins, Hoppers
and Chutes
Open and Free-Flowing**



These heavy-duty Vibrators with variable control of power can be attached to most any type and size of bin, hopper or chute.

Operate from 110 volt, 220 volt or 440 volt A. C.

Can be tied in with bin gate to start and stop automatically—ON when the gate is open—OFF when it's closed.

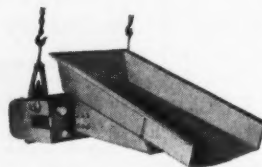
Write for literature

SYNTRON CO.

110 Lexington, Homer City, Pa.



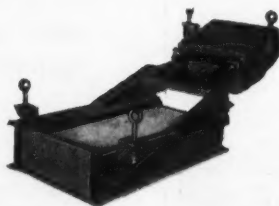
PACKERS & JOLTERS



VIBRATORY FEEDERS



VIBRATING GRIZZLIES



VIBRATING SCREENS



LONG "VIBRATORY" CONVEYORS

When inquiring check CP 9712 on handy form, pgs. 2-3

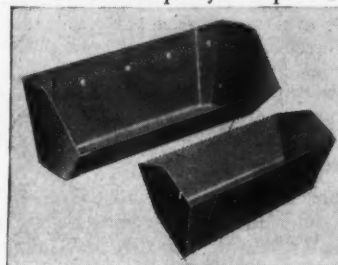
MATERIAL HANDLING

Handle granular, powdered materials faster with new elevator buckets

mount on belt at intervals or continuously; may be used on existing elevators

Uses: Recommended for handling granular, light, fluffy, powdered free-flowing materials which are not excessively abrasive.

Features: Designed and built for high speed operation and maximum capacity. Tapered ends decrease drag of



Bucket shaped for maximum pick-up, quick discharge

Formed overlapping ends provide smooth surfaces and give the buckets added body strength.

Description: Spot welded construction and crimped back insure rigidity and provide smooth flat surface for belt contact. Old style brackets on existing elevators may be replaced with these new brackets to attain increase in handling capacity.

Source: "HS" elevator buckets are made by Link-Belt Co., Dept. CP, 307 N. Michigan Ave., Chicago 1, Ill. . . . or for more information check CP 9713 on handy form, pages 2 and 3.

Grips paper-rolls, drums, placing them upright or horizontal . . .

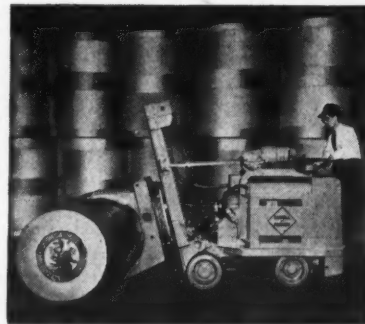
adjustable pressure of rubber-padded clamps permits lifting 2000-lb paper-roll by 6" of upper end

Uses: Semi-circular, concave gripping attachment permitting fork trucks to pick up, transport, stack or rearrange steel drums and heavy rolls of paper from vertical to horizontal position.

For unloading cars at warehouses. Applicable to casks, many materials in roll form.

Feature: Hydraulic clamping action of the two arms is pressure-adjustable so that a 2000-lb roll of paper can be picked up or put down, in vertical position, while clasped by as little as 6" of the roll's upper end. This powerful, short grip facilitates "breaking down" key rolls at car doors.

Clamping surfaces are rubber-padded. Quick pick-ups from stacks, and close, orderly stacking without pallets



Roll-handling attachment picks up a horizontal roll . . .

When Life's Too Short...



ELECTRUNITE STAINLESS STEEL TUBING AND PIPE

● Long service life is a primary advantage of Republic ELECTRUNITE Stainless Steel Tubing and Pipe that pays profitable dividends on your original investment.

Made of long-lasting Republic ENDURO Stainless Steel, these modern tubular products are highly resistant to heat and corrosion . . . are sanitary and non-contaminating . . . are easy to clean and easy to keep clean . . . require a minimum of maintenance expense.

For complete information about ELECTRUNITE Stainless Steel Tubing and Pipe, send today for a copy of Republic's free 28-page booklet which contains helpful tables of sizes, tolerances, corrosion-resistance values, and a complete section on the fabrication of stainless steel tubing and pipe.

REPUBLIC STEEL CORPORATION
STEEL AND TUBES DIVISION • CLEVELAND 8, OHIO
Export Dept.: Chrysler Bldg., New York 17, N.Y.



ELECTRUNITE
STAINLESS STEEL TUBING AND PIPE

When inquiring check CP 9714 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

call
Cambridge
for
**INDUSTRIAL WIRE
CLOTH OR SCREEN**
...from 4" opening to
20x250 mesh

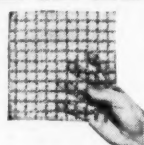


Whether you need material for filtration, screening or fabrication, Cambridge offers you one complete source for any type of wire cloth or metallic screen. Skilled Cambridge craftsmen produce your material from any gauge metal or alloy, to the particular mesh or weave that best suits your requirements.

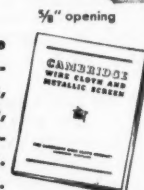


Call in your Cambridge Field Engineer whenever you need industrial wire cloth.

He can offer you fast delivery on stock or specially woven items.



FREE—ready reference book for the entire Cambridge line. Gives sizes, construction, mesh, weight, prices. Includes metallurgical and testing data. Write for free copy today.



Cambridge Wire Cloth Co.

Dept. F • Cambridge 4, Md.

trays • crates • screens
baskets • fixtures

OFFICES IN PRINCIPAL INDUSTRIAL CITIES

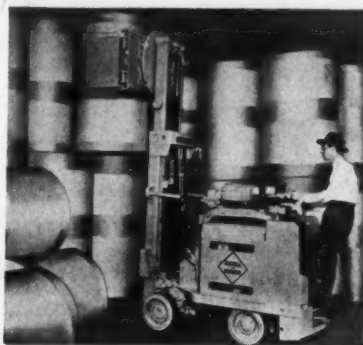
When inquiring check CP 9715
on handy form, pgs. 2-3

APRIL, 1949

MATERIAL HANDLING

— vertically or horizontally — are possible. Avoidance of pallets saves storage space. Compact size and light weight permit greater driver-visibility with added load capacity. Safely speeds unloading and storage operations.

Description: Bolts to rotary mechanism of maker's fork trucks, in place of scoop-like, semi-cylindrical steel cradle attachment (also for paper rolls). In picking up a roll from horizontal position, truck's head-frame with extra tilting angle is rocked far forward, and arms engage roll directly without need of forward thrust from truck. Normal carrying position of clamp is at middle of roll.



... and puts it down in vertical, or upright, position

On all-electric trucks, i.e., with electric-mechanical lift, the motor-driven pump for hydraulic system is engineered into clamping device. Pump of hydraulic-lift truck serves clamps directly.

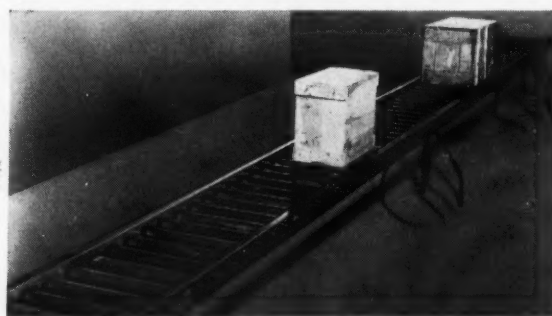
Source: Made by Elwell-Parker Electric Co., Dept. CP, Cleveland, O. . . or for more information check CP 9716 on handy form, pages 2 and 3.

**Shafts of gravity rollers
can't slip on axles . . .**

spring-locks hold axles in place, permit removing rollers from frame without tools

Uses: Gravity roller conveyors for portable or permanent use.

Features: 7/16" hexagon steel roller axles are set in hexagon holes in frames, preventing shaft or cone from turning on axle. Special springlocks, holding axles in place, permit removal of rollers without tools.



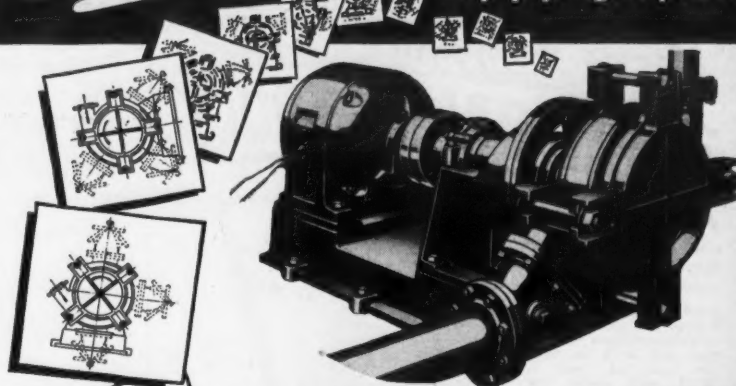
Light-weight gravity roller conveyor

Light weight of sections, and simple connectors, adapt them to 1-man handling and assembly without tools.

Description: Furnished in 5 and 10' lengths, and widths from 6 to 36", in increments of 2". Rollers are 2" diameter 16-gauge steel with special ball bearings on both ends. In welded steel sections, straight or curved.

Source: Produced by Sage Equipment Company, Dept. CP, 30 Essex St., Buffalo 13, N. Y. . . or for more information check CP 9717 on handy form, pages 2 and 3.

Easily installed in almost
any piping layout!



MORRIS TYPE "R"
SLURRY PUMP
has 72 different combinations
of nozzle locations . . .

● The suction disc swivels on the hooded bearing frame fit. This means that you can put the suction nozzle in almost any position, including the vertically upward position. This location is particularly convenient if you intend to put the pump directly under a suction tank or chest.

● The shell of the Morris Type "R" Slurry Pump is also simply constructed with extra heavy wall thickness. Its symmetrical shape permits either right or left hand rotation. By swiveling on the suction disc, you can get eight different positions of the suction nozzle.

Other features of the Morris Type "R" Slurry Pump

EASY DISMANTLING

You can renew the impeller and shaft sleeve without disturbing the suction and discharge piping or bearings.

**LONGER TROUBLE-FREE
OPERATION**

The Morris Type "R" does not have internal studs or bolts. The liner is firmly clamped in position, shoulder-fit between disc and shell.

**ALL-TIME LOW IN STUFFING
BOX MAINTENANCE**

The Morris Type "R" takes its suction from the drive side only. Equally reliable under high suction pressure . . . high vacuum and high suction lift.

**FOR CHEMICAL
OPERATIONS**

The Morris Type "R" handles mixtures containing ore concentrates . . . tailings, slag and residue from filters and classifiers . . . all types of caustic or acid mixtures containing abrasives or solids.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Branch Offices in Principal Cities

MORRIS Centrifugal Pumps

When inquiring check CP 9718 on handy form, pgs. 2-3

**YOU GET MORE SPEED,
PAY LESS FOR LABOR**

*when you handle Barrels
and Drums with-*

SABIN BARREL TRUCK

ONE MAN Easily handles up to 800 lb. loads without help.

Loading is automatic. Simply run truck up to container. Hook on at top, pull back on handle and the load is lifted and ready for easy travel on roller bearings.



Type "L-3"

\$39.50 with Semi-Steel. Roller Bearing Wheels.

INCLUDES EXCLUSIVE THIRD WHEEL FEATURE which insures better balance and added safety in moving loads.

WRITE FOR BULLETIN 48-A

THE SABIN MACHINE CO.

6534 Carnegie Avenue • CLEVELAND 3, OHIO

DEALERS WANTED . . . in Western and Central New York and Pennsylvania . . . Central Michigan . . . Missouri . . . Minnesota . . . and other territories.

When inquiring check CP 9719 on handy form, pgs. 2-3

YALE *Lift King* telescopic electric fork truck

CAPACITIES:
3,000
to
8,000 lbs.

130-INCH LIFT on 83" high models up to 5,000 lb. capacity. 68" high models have 100" lift.

66-INCH FREE LIFT on 83" high models for loading freight cars to capacity. 68" high models have 51" free lift for capacity truck and trailer loading.

DRIVES LIKE AN AUTO—Automotive controls and design make driving easier, safer, more comfortable than ever before.

RUGGEDLY CONSTRUCTED with hydraulic lift, hypoid drive power axle, Cam-o-factor control and welded heavy plate steel. Write for Bulletin 5151.



YALE THE YALE & TOWNE MANUFACTURING CO.
Roosevelt Boulevard • Philadelphia 15, Pa.
HAND LIFT AND POWER TRUCKS • HAND AND RIGGING DEVICES • INDUSTRIAL DIAL SERIES

When inquiring check CP 9720 on handy form, pgs. 2-3

Page 70

MATERIAL HANDLING

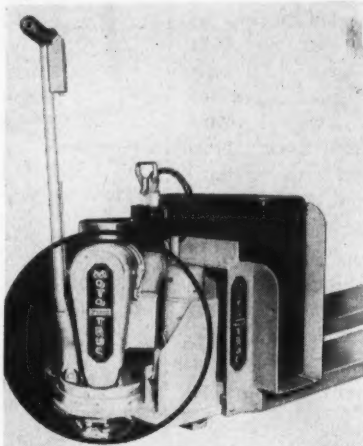
Interchange motors of pallet, platform, tractor and lift trucks . . .

simplifies servicing motorized hand trucks and features accessibility to operating parts

Uses: Line of trucks in high-lift, pallet, platform and tractor types now all use a quickly interchangeable motor. This speeds servicing and the handling of jobs for which these individual units are designed.

Features: It is possible to replace motors in 15-30 minutes. The change is made by removing four bolts and two cables;

motor itself has been improved, is equipped with ball bearings, larger armature and field coils, higher starting torque and lower draw on battery. Control of operation is unusually easy and very precise. The new motor can be used in many of the maker's trucks now in service.



Truck motor replaced in 15-30 minutes

Description: In using these truck units operator grasps the natural grip roller handle and pulls forward. This releases steering handle from safety switch. Handle is then turned in direction of travel for first speed and then a slight additional turn operates truck in second speed. Upon releasing grip on roller handle it returns to vertical position, cutting off the main switch. As the handle contacts the second safety switch, the brake is applied to drive wheel for dead man control. Push buttons in the ends of handle (within finger tip reach) control lifting and lowering.

Source: Moto-Truc Co., Dept. CP, Cleveland, Ohio . . . or for more information check CP 9721 on handy form, pages 2 and 3.

Large diameter of wheel means longer wear . . .

11 x 2" rubber-tired model fits all of maker's mobile material-handling units

Uses: Molded-on rubber-tired wheel of special design to fit all of maker's mobile material-handling units.

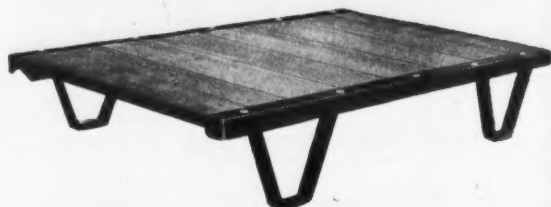
Features: Hard enough to assure easy rolling on any floor, yet possesses sufficient resilience to absorb shocks from uneven surfaces. Noiseless, sparkproof and long-wearing. Minimizes worker fatigue.

Said to provide up to 83% longer tire life than smaller wheels due to greater wearing surface.

Description: Wheel is 11 x 2". Consists of 9"-diam. cast steel core and solid rubber tire 1" thick. It fits a 3/4" axle and is equipped with roller bearings and pressure lubrication fittings. Trucks equipped with these wheels are capable of carrying loads up to 2400 lbs, according to manufacturer, and are available with either cast steel or rubber-tired wheels, as desired.

Rubber-tired wheels can be furnished separately and inter-

IRONBOUND SKIDS



...Still the low cost time proven method for efficient and economical handling of materials.

Illustrated literature will show you how most items can be handled with standard units.



IRONBOUND

BOX & LUMBER COMPANY

Materials Handling Division

65 HOFFMAN PLACE • HILLSIDE, N. J.

IRONBOUND

SKIDS • SEMI-LIVE SKIDS
DOLLIES • FLOOR TRUCKS

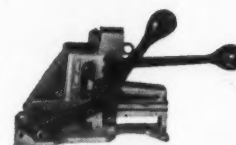
When inquiring check CP 9722 on handy form, pgs. 2-3

Add these

PROFIT MAKERS to your Shipping Room Crew



PUT SIGNODE STEEL STRAPPING to work protecting your boxes, bags, bundles or crates against shipping damage...increasing man-hour output in your shipping department...speeding delivery...building customer good will...cutting costs.



PUT YOUR PACKAGING METHODS ON A FAST PRODUCTION LINE BASIS with this new, scientifically designed strapping tool—the Signode A-2 automatic seal feed machine. This one tool tensions, seals, cuts in three easy strokes; ideal for big volume operations. Other Signode tools, equally modern and efficient, for every strapping need. Write for full details.

SIGNODE STEEL STRAPPING COMPANY

2858 North Western Avenue

Chicago 47, Illinois

SIGNODE

When inquiring check CP 9723 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

MATERIAL HANDLING

changed with cast steel wheels on all maker's Turner Transports and Jimmies.

Source: Development of Factory Service Company, Dept. CP, 4633 N. Twenty-first St., Milwaukee 9, Wis. . . . or for more information check CP 9724 on handy form, pages 2 and 3.

No pallets needed in transit; truck attachments simplify tiering loads . . .

loads are placed on paper sheets and moved on and off special pallets as required

Uses: This development makes available all the advantages of palletized handling of fork trucks in loading and unloading shipments, but eliminates the use of the pallets in transit. The system provides for removal of pallets from the load just before they are to be placed in box car or trailer and entails replacement of a similar pallet under load, by a simple operation, for easy handling upon arrival at destination.

Features: Entire handling operation is completely mechanized with great economies in time and labor. Savings in freight charges and cost of returning pallets eliminated.

Description: The system includes attachment of multiple forks which lift the load either with or without the special pallet, devices for pushing loads off the forks or pulling them aboard. Before the load is palletized, a sheet of paper is placed on floor or platform and the load placed upon it. The pulling member is in the form of a



Push-pull attachments permit withdrawal of pallet from load prior to shipment

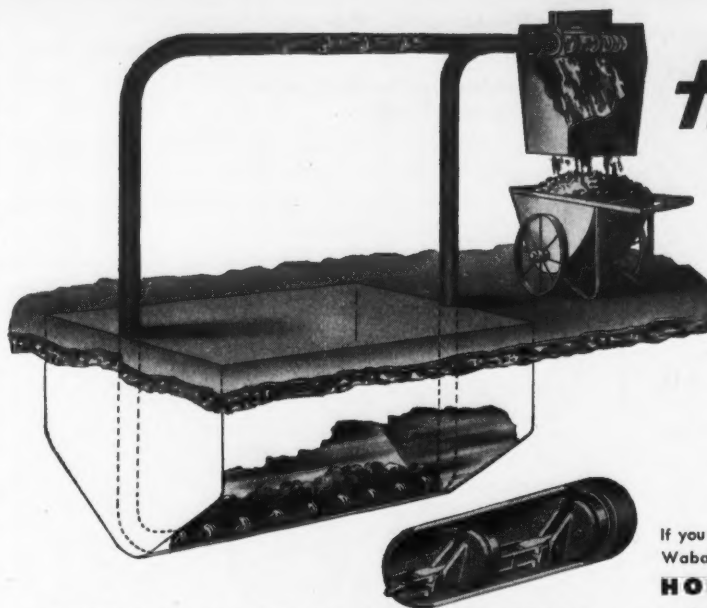
clamp type attachment approximately of the same width as the multiple forks of the truck. Paper and load are easily drawn onto the forks of the truck. By lifting the forks slightly the load can then be placed on the pallet. At this point, the load may be carried, stacked or detiered.

The openings in the special pallet permit the load, which rests permanently on the paper, to be transported to car or trailer. By inserting the forks of the truck in the second set of openings of the pallet the load, together with the sheet, is lifted clear. Truck then moves load into car or trailer, leaving pallet on shipping dock.

Upon arrival the loads are picked up by the same type of truck utilizing the same pulling attachment for drawing the load onto forks of the truck. Again placed on one of the special pallets, it is ready for stacking or any necessary handling.

Source: This new handling system is made for use with Skylift electric fork trucks by the Automatic Transportation Co., Dept. CP, 149 W. 87th St., Chicago, Ill. . . . or for more information check CP 9725 on handy form, pages 2 and 3.

APRIL, 1949



Houdaille* CONVEYOR will work for you

Originally designed to handle sludge and waste matter in the metal working industry, the Houdaille Conveyor is being used to handle a wide range of materials handling applications.

This automatic loading and continuous materials transport is adaptable to transporting any solid or fibrous material which will settle to the bottom of a tank or hopper.

If you have a materials transporting problem, write to 224 Wabash Avenue, Lebanon, Indiana in care of
HONAN-CRANE CORPORATION
a subsidiary of **HOUDAILLE-HERSHEY CORP.**

HERE ARE A FEW OF THE SUGGESTED USES FOR THE HOUDAILLE CONVEYOR

METAL WORKING
(wet or dry)
Metal Chips
Cast Iron Dust
Aluminum Oxide
Abrasives Sludge
SETTLING TANKS
Contamination
Scale

FOOD PROCESSING
SOAP MANUFACTURING
Soaps
REFRACTORIES
Ceramic Powders
Aggregates
Refractory Materials
Cement

FOUNDRIES
Foundry Sands
Slag
PACKING PLANTS
Cracklings and Similar
By-products
MANY OTHERS—
such as Coal, Fly Ash, etc.

The **Houdaille*** CONVEYOR

*Pronounced Hoo-dye

When inquiring check CP 9726 on handy form, pgs. 2-3

YOU CAN PUT YOUR FOOT DOWN SAFELY



ON
BLAW-KNOX
ELECTROFORGED STEEL
RUNNING BOARDS,
BRAKE STEPS, AND
PLATFORMS
FOR TANK CARS



BLAW-KNOX DIVISION OF BLAW-KNOX COMPANY
2076 Farmers Bank Bldg., Pittsburgh 22, Pa.
Representatives in Principal Cities

When inquiring check CP 9727 on handy form, pgs. 2-3



Faster Drying with AMERICAN MONORAIL

This simple MonoRail system really speeds up leather drying.

After wet leather is pasted on glass carrier, it moves through dryer, then dry leather is stripped from glass. An automatic switch transfers carrier from single to double line travel through dryer. After leather has been removed, carrier is automatically transferred from a double to single line travel through the plate washer and pasting stations. American MonoRail engineers can show you how to increase production and lower costs.

THE AMERICAN MONORAIL COMPANY

13109 Athens Avenue • Cleveland 7, Ohio

When inquiring check CP 9728 on handy form, pgs. 2-3

HANDLE IT CHEAPER, SAFER by MOTO-TRUC!



Telescopic
Hi-Lift Truck

IT OPERATES EASIER
and in
NARROW AISLES

Write for
**BULLETIN
No. 49**

Showing complete line
of Pallet, Platform and
Hi-Lift Trucks.

THE MOTO-TRUC COMPANY
1953 East 59th Street
Cleveland 3, Ohio

Originators of
MOTORIZED HAND TRUCKS

When inquiring check CP 9729 on handy form, pgs. 2-3

Page 72

MATERIAL HANDLING

Sling-lifting of loads is safe with locking hook . . .

safety-tie lip lock holds sling on hook, adds strength, prevents snagging on beams, etc.

Uses: Used whenever rigging or sling-lifting of loads is part of materials handling.

Features: Automatic mousing action with a safety-tie lip lock holds point of hook, preventing sling from slipping off and adding strength to hook. Construction also prevents snagging of point of hook on beams and other obstructions.

Pin can be sheared without affecting load holding capacity. This is due to unique type of shoulder contact between lip lock arm and hook.

Description: All bearing surfaces of these drop-forged safety hoist hooks are machined for accuracy. Action is simple and positive. Available in two sizes — 5 and 10-ton — each with either an eye bridge or shank bridge. Hooks are reported to weigh about 1/3 as much as ordinary hooks for the same rated capacity.

As load is being carried, lip of hook stays securely in position on lip lock. When load is removed, hook is lifted slightly and swung back from lip lock, permitting easy removal of sling.

Source: Made by The Brewer-Titchener Corporation, Dept. CP, Cortland, N. Y. . . . or for more information check CP 9730 on handy form, pages 2 and 3.

Compact, automatic charger for hand lift-truck batteries easily-operated . . .

smallest rating weighs 115 lbs, uses 10-5/8 x 14-5/8" floor space; features full accessibility

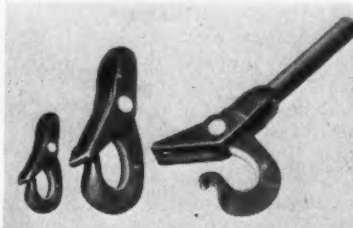
Uses: For servicing batteries of motorized hand lift trucks.

Features: Compact. Weighs only 115 lbs in its smallest rating; occupies only 10-5/8 x 14-5/8" floor space. Combines ease of operation with full accessibility. Fully automatic operation.

Raising control box lid, hinged at top, reveals all control equipment. Removing helmet-type motor-generator cover gives quick access to brushes and generator field rheostat. (Motor-generator cover is held in place by a lifting eye-bolt.) Operating instructions are etched on nameplate, and adequate information concerning sequence of operation, adjustments and maintenance are glued inside control box cover.

Description: To operate, truck operator plugs together the charging cable connector and turns pointer at upper left corner of nameplate to "Normal Charge" position. Charging-current automatically begins at proper value and is controlled throughout charge at rates prescribed by battery manufacturer.

In case of power failure, charger stops; it resumes when power is restored, shutting down completely when battery



Left—5-ton safety hook with eye bridge. Center—10-ton hook with eye bridge. Right—10-ton hook with shank bridge

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In hard water, soft water, hot or cold

this superior wetting agent is equally effective. It actually lifts off dirt, grime and grease faster and cleaner than anything you have ever tried. Just wash and rinse. Practically no toweling needed. Economical, too. One spoonful makes a gallon of active cleanser ready to go to work on your toughest job.

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Test it yourself . . . on a tough job.

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Order some today from your Laboratory Supply dealer, or write to us for FREE SAMPLE and name of your nearest dealer.

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Manufacturing Chemists

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JERSEY CITY 4, N. J.

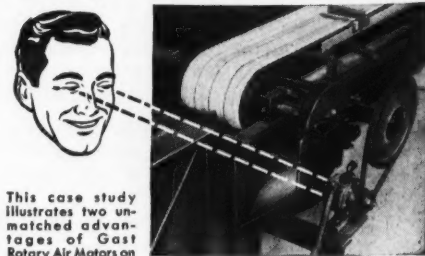
When inquiring check CP 9731 on handy form, pgs. 2-3

PROBLEM: Drive a conveyor-belt carrying fragile material so that belt speed drops when drag of load increases.

SOLUTION: A Gast Air Motor maintains constant tension on material in process despite varying drag of load and belt r.p.m.

RESULT: This variable-speed drive reduces material spoilage—saves money.

UNUSUAL CONVEYOR-BELT PROBLEM solved with a variable-speed GAST AIR MOTOR



WRITE
TODAY!
Request your
copy of GAST'S
IDEA-CATALOG

This case study
illustrates two
unmatched advantages
of Gast
Rotary Air Motors on
original equipment
applications. More advantages:

AIR MOTORS CAN'T BURN OUT—It's possible to stall them—but they can't burn out!

CAN'T SPARK EXPLOSIONS—No sparks—Gast Motors are explosion-proof.

GIVE VARIABLE R.P.M.—Controlled speed from 100 to 2,000—some to 6,000 r.p.m.

In many other ways, Gast Air Motors offer more—at less cost. Investigate now. "Air may be your Answer!"



AIR MOTORS • COMPRESSORS • VACUUM PUMPS
(TO ONE H.P.) (TO 30 H.P.) (TO 30 INCHES)
GAST MANUFACTURING CORP., 101 Wabley St., Benton Harbor, Mich.

When inquiring check CP 9732 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

PROMPT DELIVERY

HERCULES *Aero*

(RUBBER CUSHIONED)

and

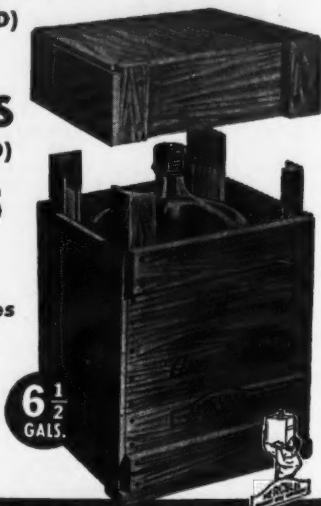
HERCULES

(CORK CUSHIONED)

CARBOY BOXES

Available in

5 & 13 gallon sizes
to comply with ICC-
IA. Available in 6 1/2
gallon size to com-
ply with specifi-
cation ICC-ID.



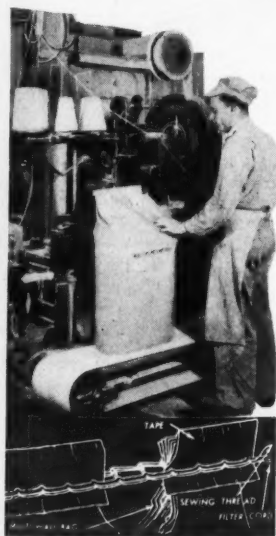
NATIONAL BOX & LUMBER COMPANY

HOME OF HERCULES CARBOY BOXES • NEWARK 5, N. J.

When inquiring check CP 9733 on handy form, pgs. 2-3

for greater security...

... the Union Special closure for



Here is the equipment for closing large size multi-wall paper bags: Union Special's Style 21800 H table type bag closing machine with Style 80600 H sewing head. Specially designed to produce a tight, durable, economical closure at high speed. The machine applies a paper tape binding, folds it over the top of the bag, automatically inserts a filter cord, and sews through the bag top in a smooth, continuous operation. For easy handling of bags, standard units are equipped with a five-foot, adjustable, power-driven conveyor. Ask for Bulletin No. 200.

Union Special

Machine Company

442 NORTH FRANKLIN STREET • CHICAGO, ILLINOIS

When inquiring check CP 9734 on handy form, pgs. 2-3

APRIL, 1949

MATERIAL HANDLING

is fully charged. Seven ratings service the following batteries:

| | Lead-Acid Batteries | | | | |
|------------------|---------------------|-----|---------|-----|-----|
| Amp-hr Capacity: | 200/300 | 162 | 301/550 | 250 | 192 |
| No. of Cells: | 6 | 10 | 6 | 12 | 18 |

| | Edison Batteries | |
|------------------|------------------|---------|
| Amp-hr Capacity: | 225/300 | 338/450 |
| No. of Cells: | 10 | 10 |

Source: The Electric Products Company, Dept. CP, Cleveland 12, O. . . or for more information check CP 9735 on handy form, pages 2 and 3.

Move drums, 2000-lb loads, by motorized hand truck . . .

operator merely steers, regulates speed; unit climbs short 20% ramps with 1500 lbs

Uses: Motorized hand truck for carrying loads up to 2000 lbs on level hauls or moving loads up to 1500 lbs up short 20% grades. A special model handles drums.

Particularly effective for heavy loads, long hauls, rough flooring or gravel, inclines or ramps. Can be combined with a hand-truck pallet.

Features: Operator merely steers and regulates speed. Starts and stops by convenient finger-tip control on handles. Positive 2-wheel brakes. Third wheel has 6 height-stops to permit adjusting angle of load for most efficient handling.

Description: Speeds of 2 to 5 mph under capacity load. Four-cycle, 1 1/2 hp gas engine. "Kick starter." Power transmitted through jack-shaft to wheels by means

of full chain-drive and centrifugal clutch. Heavy-duty, demountable rubber-tire, roller bearing wheels with friction drive.

Unit described is Model 103. A Special model, No. 105, has concave drum carriage and rugged automatic hook to latch on to drum. Truck is leaned against drum, hook drops

over chime, truck slides into normal position, drum automatically comes to rest on carriage, and load is broken by slight acceleration of motor.

Source: Comet Manufacturing Co., Inc., Dept. CP, 9253 Nicollet Ave., Minneapolis 9, Minn. . . or for more information check CP 9736 on handy form, pages 2 and 3.

Hand trucks automatically keep materials at table height

Material is kept at table height and stooping eliminated by hand truck illustrated in 4-page folder, according to literature. Platform automatically raises and lowers as materials are added or removed. Activated by self-contained springs.

Bul. DM-518, issued by Lowerator Division, American Machine and Foundry Co., Dept. CP, 485 Fifth Ave., N. Y. 17, New York. When inquiring specify CP 9737 on handy form, pages 2 and 3.



Motorized hand truck

8 A.M. EFFICIENCY

maintained **ALL DAY**
with **ORTON**

POWERMATIC

AIR-CONTROL

AERO-CRANE

No afternoon fatigue let-down!

One man, with the Powermatic Air-Control Orton Aero-Crane loads and unloads cars and trucks, gets material onto the stockpile and off with early morning efficiency all day. High mobility job to job. Full-view cab. Full circle turn-table. Anti-friction bearings. Non-burn Orcoin V-type clutches. Orton SAFETY engineering. Adaptable to hook, clamshell, grapple or magnet. Eight models, 3500 to 60,000 lbs. capacity. Diesel or gasoline powered.

Send for details, Catalog 80.



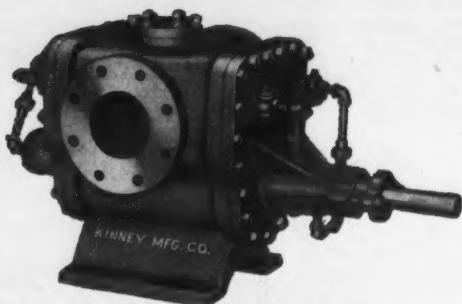
Long-life Orton Aero-Crane has most rigid car body of any crane built. Goes anywhere a truck will go. One man does the work of four handling yard jobs that eat up the time of a crew.

ORTON

CRANE AND SHOVEL COMPANY
608 SOUTH DEARBORN STREET
CHICAGO 5, ILLINOIS

When inquiring check CP 9738 on handy form, pgs. 2-3

Page 73



Pumping **HEAVY** Materials LIGHT Work for **KINNEY SD**

Kinney SD Rotating Plunger Pump handles heavy materials formerly transported as solids — and pumps them with speed and dependability. Commercial white lead, oils, gassy molasses, cup grease, and many similar materials are now handled as liquids by this efficient pump. Immense savings in speed, convenience, and costs are effected, thanks to Kinney SD.

Write for Bulletin L48 — shows the complete line of Kinney SD Pumps (both plain and steam jacketed) for pressures to 400 p.s.i. and capacities to 3000 GPM.

KINNEY MANUFACTURING CO.

3573 Washington St., Boston 30, Mass.

New York • Chicago • Cleveland • Philadelphia • Los Angeles
San Francisco

We also manufacture Vacuum Pumps, Clutches and Bituminous Distributors

KINNEY ROTARY PUMPS

When inquiring check CP 9739 on handy form, pgs. 2-3

PIPE MARKERS



**anyone
can use—
everyone
can read**

QUIK-LABEL Pipe Markers conform to American Standards Association Pipe Identification System. QUIK-LABELS come on handy cards . . . stick without moistening. Names of materials printed in large black letters on correct ASA background colors. CAN BE READ UP TO 75 FEET. Markers for over 140 materials, **including all materials listed in ASA Standard A13**, available on Brady Stock Cards. Specials made to your order. QUIK-LABEL Pipe Markers are Silicone Plastic coated to resist dirt, grease, fumes, moisture . . . indoors or out. Replace slow and costly painting and hand stenciling. Exclusive Starter-Strip automatically releases part of label for fast peeling. QUIK-LABELS mark your pipes so that anyone who can read will know what's in them. **QUIK-LABELS leave no room for doubt . . . or tragedy.** Write for useful literature and FREE SAMPLES today.

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W. H. BRADY COMPANY Established 1914

Manufacturers of Self-Sticking Tape Products

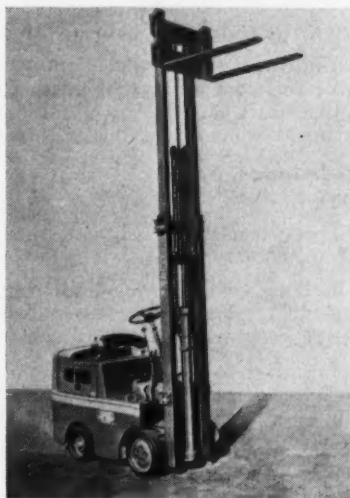
Chippewa Falls 10, Wisconsin • Distributors in 125 Cities

When inquiring check CP 9740 on handy form, pgs. 2-3

MATERIAL HANDLING

Unite high lift, low clearance in fork truck attachment . . .

versatile 2000-lb-capacity unit fits gas or battery-powered Clipper models



Hi-Lo-Stacker attachment

mum lift of 130" and a "free lift" of 64" without increasing overall height of machine.

Description: Improvements include a single hydraulic lift-cylinder and single set of uprights, and employment of manufacturer's balanced hydraulic system for lift operation.

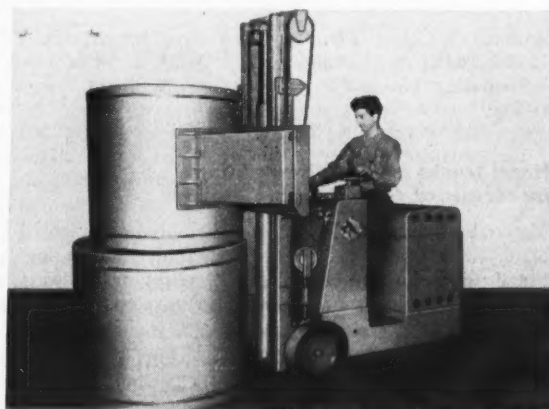
Source: Made by Clark Equipment Company, Industrial Truck Div., Dept. CP, Battle Creek, Mich. . . or for more information check CP 9741 on handy form, pages 2 and 3.

Attach 2000-lb-capacity clamps to gas or electric trucks . . .

pick up, move or deposit drums, paper rolls, etc.

Uses: Clamper attachment for picking up, moving and depositing paper rolls, drums, etc., in a vertical position and up to a capacity of 2000 lbs. Applicable to gasoline, electric or gas-electric-driven Lewis-Shepard fork trucks.

Features: Adjustable for varying load-diameters. Holding of load in transit or while stacking is entirely inde-



Placing rolls in stacking position

GREAT IDEA



new peelable stickers

to carry { INSTRUCTIONS WARNINGS
SALES FEATURES TRADE-MARKS

Manufacturers everywhere are switching to Kum-Kleen Self-Adhesive Labels. Here's why: *They're new, different, far more efficient.* Adhere firmly to any smooth surface—metal, plastic, glass, wood, painted or varnished.

Won't dry out, curl, pop or fall off—yet peel off easily in one piece without leaving a trace.

Now—place instructions, warnings, trade-marks, describe finishes and point out features directly on the product at the exact place such data should be carried.

And when they've served their purpose, Kum-Kleen Stickers peel off without scraping—a feature your customers appreciate.

Kum-Kleens are quickly applied *without moistening*—are available in any size, shape or color, printed to your specifications. Write today for free samples to Dept. CP-4



EVERY ADHESIVE LABEL CORP., Monrovia, Calif.; 41 Park Row, N. Y. 7; 608 S. Dearborn St., Chicago 5; 3049 E. Grand Blvd., Detroit 2; 2123 E. 9th St., Cleveland 15, and all principal cities. Canada: Enterprise Sales, Toronto.

When inquiring check CP 9742 on handy form, pgs. 2-3



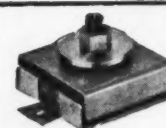
FOR LOW COST VIBRATION CONTROL

KORFUND ELASTO-RIB—a combination pad utilizing the elastic and damping properties of both rubber and cork—provides a simple, inexpensive method of controlling vibration in all directions, for smoother, quieter operation and longer machinery life. The special construction—cork between layers of deep-grooved, oil-resistant rubber—guarantees a non-skid surface.

It is widely used for isolating machine tools, laboratory and air conditioning equipment, business machines, and also to protect precision instruments from external vibration.

Elasto-Rib is 1" thick, with a loading range of 750-5000 lbs. per square foot. Maximum size of a single sheet is 24" x 36". It can be ordered cut to required size or stocked and cut to size as needed.

Write for complete details and free sample.



The Elasto-Rib Damper—a telescoping steel-housed adaptation of Elasto-Rib designed for installations where a machine must be bolted to the floor.



THE KORFUND COMPANY, INC.

48-13 E. 32nd Place • Long Island City 1, N. Y.

When inquiring check CP 9743 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview



STRAINERS AND FILTERS AVAILABLE IN ALL TYPES AND SIZES

A longer lasting, accurately made filter or strainer increases your profits at every application. The skilled craftsmanship and selected quality materials used in the manufacture of Cleveland Wire Screen is your yardstick for discriminating buying. Custom designed strainer elements are produced in small or large production runs from Chrome Nickel or Copper Alloys. Write for Strainer and Filter Bulletin No. 7.

A CLEVELAND WIRE SCREEN FOR EVERY PURPOSE

THE CLEVELAND WIRE CLOTH & MFG. CO.
3574 E. 78 STREET • CLEVELAND 5, OHIO

When inquiring check CP 9744 on handy form, pgs. 2-3



STAINLESS BY GRAVER

SPECIAL STEELS, SPECIAL SKILLS FOR THE PROCESS INDUSTRIES
This alloy steel lined reactor tower is an example. The danger of corrosion called for special alloys in lining the shell plates and heads of the vessel . . . and these alloys called for special skills in fabricating and welding. To handle jobs like this, the exacting work required by the process industries, Graver maintains a separate manufacturing division. This division offers immediate fabrication of stainless, stainless clad, nickel, nickel clad, Monel, Everdur and aluminum . . . vessels of any size . . . 12 gauge and heavier . . . finishes up to No. 4. Fabricating facilities are complete. Code requirements are met in every case. For full information and quotations . . . write Graver today!

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GRAVER TANK & MFG. CO. INC.

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SAND SPRINGS, OKLA.

GRAVER

When inquiring check CP 9745 on handy form, pgs. 2-3

APRIL, 1949

MATERIAL HANDLING

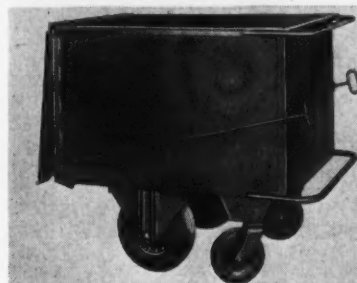
pendent of hydraulic system. "Dead-man" type hand lever on control cab permits clampers to remain in any position, giving operator full use of hands for other operating controls. Self-centering, rubber-lined grip pads.

Description: Clampers close by powerful adjustable tension springs controlled by operator. Arms open hydraulically; a safety device prevents dropping load due to loss of hydraulic pressure. Roll-clamper and positioning pads adjust by means of a lever on back of carriage.

Source: Lewis-Shepard Products Inc., Dept. CP, 282 Walnut St., Watertown 72, Mass. . . or for more information check CP 9746 on handy form, pages 2 and 3.

Wheel light parts in all-steel box . . .

hand-levers unlock for quick contents-disposal



Box-type hand truck

Uses: Box-type hand truck for handling light parts, similar items.

Features: Boxes are all-steel, made to specification, and unlock at front bottom for contents-disposal. Maneuverable.

Description: Vehicle has 4 pneumatic tires, the 2 larger being stationary.

Pushing end has 2 pivot-wheels. Two hand-levers at same end permit operator to unlock box.

Rectangular tubular handles at top and bottom of pushing end offer simple means of lifting truck for emptying.

Source: Produced by Palmer-Shile Company, Dept. CP, 16002 Fullerton Ave., Detroit 27, Mich. . . or for more information check CP 9747 on handy form, pages 2 and 3.

Bulky bales, bags, drums, boxes handled without pallets

8-page, 2-color bulletin gives model views and operational photographs of lift trucks equipped with side-squeezing device. Hydraulically controlled device side-squeezes load enough to lift it, thus handling bulky items with ease. Six interchangeable arms facilitate specialized handling. Specifications included.

Bul. 1123, issued by Hyster Company, Dept. CP, 2905 N. E. Clackamas St., Portland 8, Oregon. When inquiring specify CP 9748 on handy form, pages 2 and 3.

Shows specialized trailers of 2 to 30 ton capacities

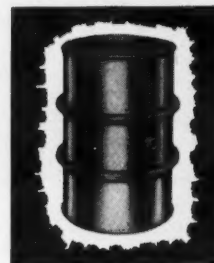
16-page bulletin gives specifications, dimensional drawings of steer trailers with payloads from 2 tons to 30 tons. Types, characteristics and uses are given. All trailers especially recommended for use in tractor-trailer trains where materials must be hauled over 200 ft.

Typical items shown include 4 ton cap. caster trailer, 3 ton cap. fifth-wheel side dump trailer, 30 ton cap. fifth-wheel die handling trailer, 3 ton cap. four-wheel trailer, etc. Bul. A-999, issued by Mercury Manufacturing Co., Dept. CP 4020 So. Halsted St., Chicago 9, Illinois. When inquiring specify CP 9749 on handy form, pages 2 & 3.

Safeguard
PRODUCT QUALITY
with

NILES
BARRELS AND DRUMS
of **ENDURO** Stainless Steel

Don't take chances with product contamination. Use barrels and drums of Enduro—the lustrous metal that is inert to most chemical and food products—that is sanitary and easy to clean—that is resistant to corrosion—that is tough and strong—that is economical to use because it lasts so long.



The NILES Line offers a type and size for every chemical and food plant need. Write us for literature.

★ ★ ★

The solid head drum at the left and the patented Ringlox drum shown above are but two of the many styles in the complete NILES Line.

NILES STEEL PRODUCTS DIVISION
REPUBLIC STEEL CORPORATION
DEPT. CP, NILES, OHIO

NILES
METAL BARRELS AND DRUMS

When inquiring check CP 9750 on handy form, pgs. 2-3

Page 75

**Use HAMMOND
Multi-Wall
BAGS**
SEWN • PASTED • OPEN MOUTH • VALVE STYLE

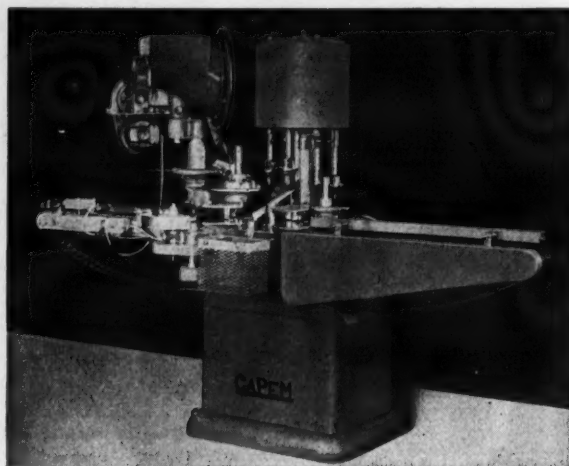
... for safe, dependable
shipment of your chemical
products under any conditions.
Bags are attractively printed.

Write for quotation today!



HAMMOND BAG and PAPER CO.
General Offices: WELLSBURG, W. VA.
Plants in Wellsburg, W. Va. & Pine Bluff, Ark.

When inquiring check CP 9751 on handy form, pgs. 2-3



**CAPEM . . . APPLIES ANY
SCREW-CAP AT 2,000 TO 10,000
AN HOUR . . . DELIVERS A LEAK-
PROOF SEAL . . . AT LOW COST**

Available in 1, 2, 4, 6 and 8 spindle models

Write for prices

CONSOLIDATED PACKAGING MACHINERY CORP.
BUFFALO 13, N. Y.

When inquiring check CP 9752 on handy form, pgs. 2-3

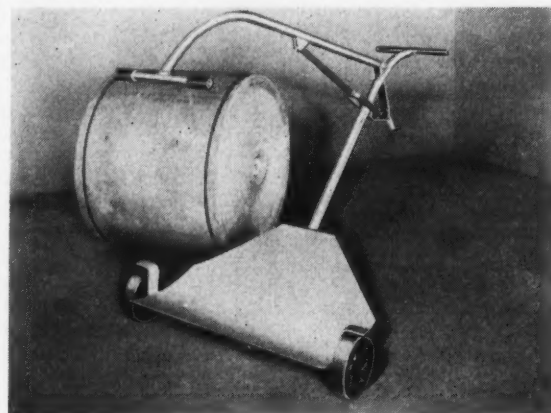
MATERIAL HANDLING

Grips, lifts and carries drums, paper-rolls . . .

design facilitates rapid centering of load between
wheels, without wheel interference

Uses: For gripping, lifting and carrying paper rolls,
barrels, drums, kegs, similar items weighing up to 2000
lbs.

Features: Speeds loading by providing a means for
more rapid centering of load between wheels. Offset
wheels are furnished with fenders which prevent objects



Roll or drum-handling truck

carried from interfering with their turning.

Description: Three standard cradle-widths accommo-
date loads up to 22, 32 and 40" wide. Front wheels of 6
or 8" diameter are semi-steel, molded plastic or rubber-
tired, with Hyatt bearings.

Simplified load-holding arm locks securely around load
by a few turns of locking handle, and will not disengage
until manually released. Cradle is heavy-rolled steel
plate; handle and locking-arm are steel pipe. All neces-
sary points securely welded for strength. Hardened steel
axles are positioned to assure equal load distribution. Rear
caster has double ball bearing raceways for free swiveling.

Source: A development of Ironbound Box & Lumber
Company, Dept. CP, 37 Hoffman Place, Hillside, N. J.
. . . or for more information check CP 9753 on handy
form, pages 2 and 3.

Slip "dolly-rollers" under boxes, heavy objects, move them with ease . . .

rugged units with steel roller bearings; non-slip
balance plate; carrying capacity to 8000 lbs.

Uses: for easy, rapid movement of large and heavy
boxes, crates, machinery and skidded articles.

Features: Easily placed under load. No resetting,
no shifting. These roller units are free-turning, compact
and sturdy. Grip teeth on balance plate prevent slipping.
Up to 8000 pounds handled with ease.

Description: Developed by a veteran freight man,
these "Dolly-Rollers" are easily slipped under loads. Steel
roller or rubber tread type for use on finished floors are
each equipped with cleat plate 3" x 8". Both have
capacity of 6000 to 8000 pounds.

Full swinging action allows movement in any direction.
Loads easily turned, switched or backed. "Dolly-Rollers"

NOW



ON WEIGHTS!

Fairbanks-Morse Printomatic Weighers eliminate
the human element . . . stop profit-eating weighing
errors. Just press a button and the weight is auto-
matically recorded on a ticket or tape. It's the
fastest, easiest, most accurate way to weigh. For
all the facts, write . . . Fairbanks, Morse & Co.,
Chicago 5, Ill.



FAIRBANKS-MORSE

A name worth remembering

DIESEL LOCOMOTIVES • DIESEL ENGINES • STOKERS • SCALES • MOTORS • GENERATORS
RAILROAD MOTOR CARS and STANDPIPES • PUMPS • FARM EQUIPMENT • MAGNETOS

When inquiring check CP 9754 on handy form, pgs. 2-3

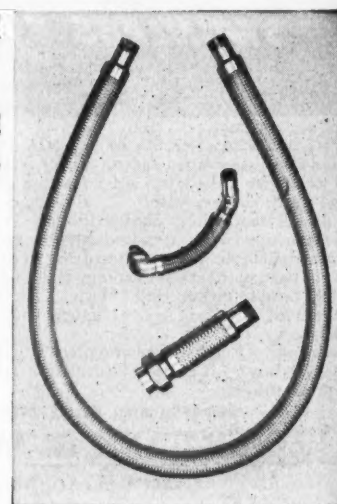
YOUR BEST BUY IS BY



CONVEYOR LINES

FOR CORROSIVE LIQUIDS & GASES

Bendix Seamless
Flexible Bronze
Metal Hose assures
you greater flexi-
bility—longer
service life. In
addition, it is engi-
neered to your re-
quirements in
stainless steel,
monel, SAE 1010
carbon steel and
other special alloys.



MADE BY ECLIPSE-PIONEER DIVISION

Bendix Aviation Corporation • Teterboro, N. J.

When inquiring check CP 9755 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview



Compact "Dolly-Rollers" move boxes and crates

weigh approximately 22 pounds each. Diameter of steel rollers is $2\frac{3}{4}$ inches; rubber 3 inches.

Source: Dolly-Roller Company, Dept. CP, 6016 East 12th St., Kansas City 3, Mo. . . or for more information check CP 9756 on handy form, pages 2 and 3.

"Break over" and roll 1000 lbs. with little effort . . .

63-lb barrel truck with rubber-covered hand grips stands erect when not being used

Uses: Handling of barrels and drums up to 1000 lbs.

Features: Frame balance and wheel placement permit minimum effort in breaking over and rolling load. Weighs only 63 lbs. Truck stands in erect position when not in

use, a safety feature that eliminates possibility of tripping over low-lying object. Rubber-covered hand grips also contribute to safety.

Description: Truck frame is single center column handle bar type with frame of $1\frac{1}{4}$ " tubular steel and center column of square steel tubing. Wheels are 10" diameter x $2\frac{1}{2}$ " face width with heavy-duty molded-on rubber tires. Hubs have Hyatt roller bearings and grease-gun fittings which assure easy lubrication.



1000-lb capacity barrel truck

ings and grease-gun fittings which assure easy lubrication.

Source: One-man barrel and drum truck is made by Thomas Truck and Caster Company, Dept. CP, Keokuk, Iowa . . . or for more information check CP 9757 on handy form, pages 2 and 3.

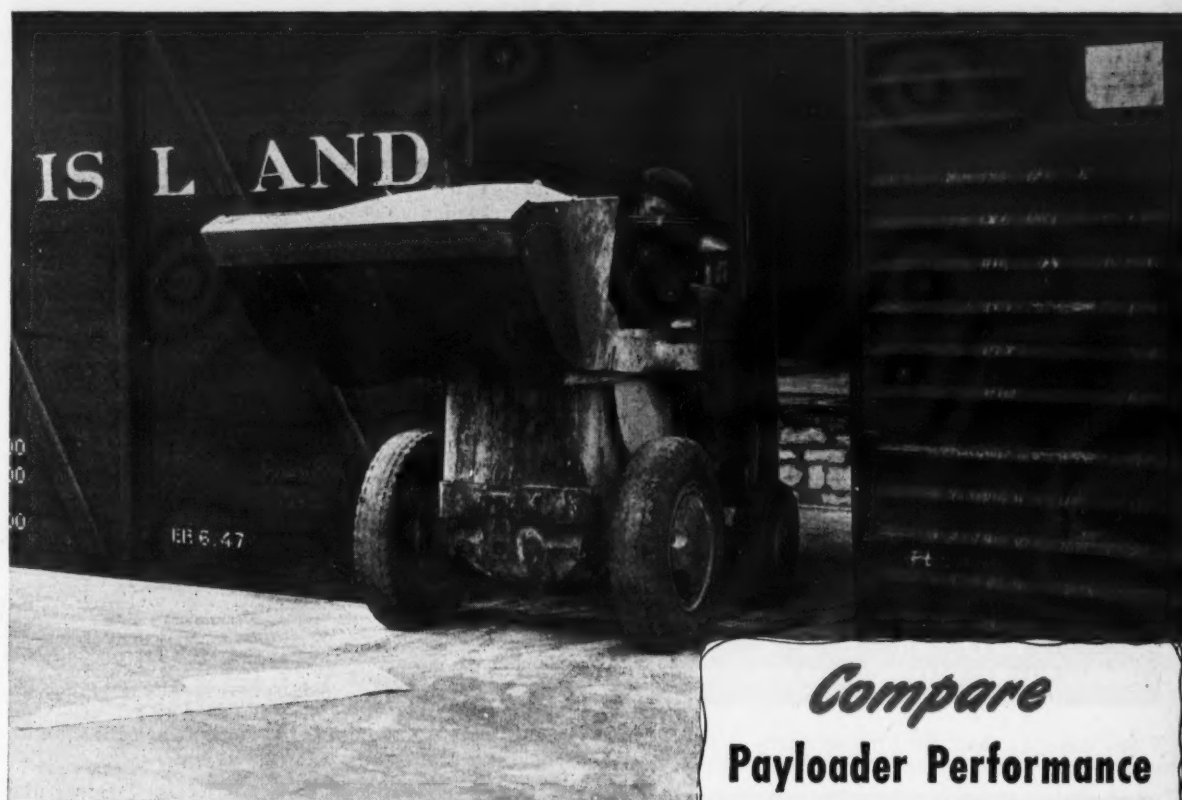
Construction, specifications of pulleys

Iron and steel pulleys, conveyor pulleys and wing-type pulleys are pictured in 12-page bulletin. Construction and detailed specifications given. Installation photos.

Bul. ID-108, issued by Continental Gin Co., Dept. CP, Birmingham, Alabama. When inquiring specify CP 9758 on handy form, pages 2 and 3.

APRIL, 1949

How do you handle BULK Materials?



Compare Payloader Performance

- ✓ One HA Payloader unloads a box car of superphosphate in $2\frac{1}{2}$ hours, traveling 200 ft. round trip to the stockpile. Formerly took 5 men, 4 hours. Also saves 40 manhours per car unloading bagged ammonium nitrate.
- ✓ Two HA Payloaders unload a 50-ton box car of chemicals in $1\frac{1}{2}$ hours. Formerly took 9 men, $4\frac{1}{2}$ hours.
- ✓ Unloading box cars of chemicals, also hauling fertilizer 150 feet to mixer, one Model HA Payloader and operator does in one hour as much as 15 men working 5 hours.
- ✓ Model HA Payloader unloads box cars of phosphoric acid. Compared to previous method, it has cut unloading time in half and saves 88 manhours of labor per car.
- ✓ Traveling 200 feet round trip, carrying loose fertilizer from bins and dumping into bagging mills, four HA Payloaders handle 50 tons per hour—save 126 manhours per day.

Are you equipped to scoop up, carry, lift and unload your bulk materials quickly and cheaply? Do you require expensive containers for your mass materials in transit? How much do you handle with each operation?

Hough Payloaders are designed and built primarily for the handling of loose materials—to provide a fast, flexible materials handling system . . . to cut time and costs . . . to boost output per manhour. Scoop up your loose materials in Payloader's even-keel bucket, move them without spilling in and out of box cars, through narrow aisle ways and through mud and soft ground if you wish. Dump your materials into hoppers, containers or bins—high or low, slow or fast—by fingertip-controlled hydraulic action.

The accompanying performance notes are only a few examples of how and why hundreds of plants are saving time and costs and boosting output per manhour with Payloaders. It will pay you to get the full Payloader story, too. The Frank G. Hough Co., 744 Sunnyside Avenue, Libertyville, Illinois.



HOUGH PAYLOADER

Manufactured by THE FRANK G. HOUGH CO.

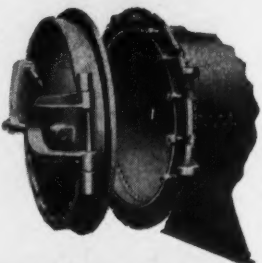
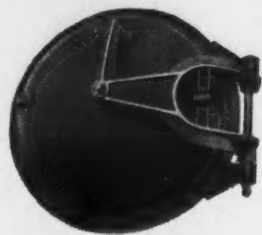


When inquiring check CP 9759 on handy form, pgs. 2-3

SIMPLEX QUICK OPENING DOORS 18 to 120 Inches Diameter

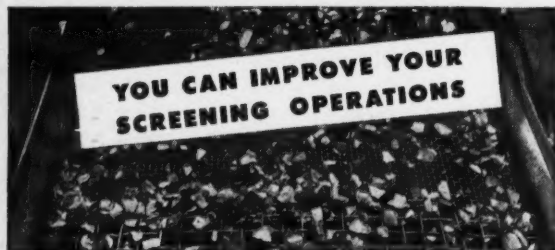
BOLTLESS TYPE—One-man operated doors save time in loading and unloading material to pressure vessel. All weight is supported by a sturdy central trunnion - no bolts - no counterweights - no overhead trolleys.

BOLT TYPE—Convert old bolt-type vulcanizer doors to Simplex Quick-Opening doors for speeding up production. A specially drilled flange to fit your vessel without removing old head rings does the trick. Outline your requirements. Write for booklet SD.



NATIONAL-ERIE CORPORATION
ERIE, PA., U. S. A.
EXTRUDERS, STRAINERS, MILLS, PRESSES FOR RUBBER AND PLASTICS

When inquiring check CP 9760 on handy form, pgs. 2-3



Use Robins Super-Gyraloy Screen Cloth for Longer, More Dependable Service

You'll appreciate savings made possible by Robins Super-Gyraloy Screen Cloth. It has these three essential properties:

TOUGHNESS... to withstand more shock than any other screen cloth material.

HARDNESS... to resist abrasion longer; special alloy is hardest ever used for screen cloth.

DUCTILITY... to hold its original size without elongation or crystallization.

Robins Super-Gyraloy Screen Cloth is available from 1/8" openings with 15-gauge wire to 6" openings with 1/2" rod. Robins Screen Cloth is also available in Gyraloy (spring steel), stainless steel, Monel metal or brass. Write Robins today for Bulletin 113.

**ROBINS
SCREEN CLOTH**

**ROBINS CONVEYORS
Division**
Hewitt-Robins Incorporated
PASSAIC, NEW JERSEY

When inquiring check CP 9761 on handy form, pgs. 2-3

Page 78

MATERIAL HANDLING

Attach drum-pusher to high-lift truck . . .

individual pushbuttons move drums singly or together

Uses: This twin pusher attachment simplifies handling metal drums. For use with manufacturer's standard Skylift electric fork trucks of all capacities.

Features: Rams operate independently or simultaneously. They are quickly detached and replaced by standard forks, permitting trucks to be used for general materials handling duties as well as specialized assignment.

Description: Completely self-contained, including its own motor and pumps. Individual push-button controls. High-pressure hydraulic operation. Overhead guard protects operator.

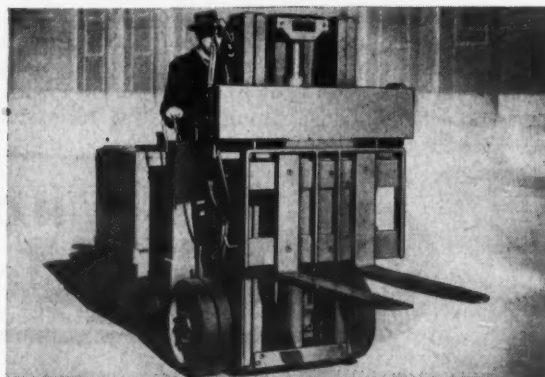
Source: A development of Automatic Transportation Company, Dept. CP, 149 W. 87th St., Chicago, Ill. . . . or for more information check CP 9762 on handy form, pages 2 and 3.

Driver of fork truck can easily roll forks through 180° . . .

control of rotating assembly invested in single handle on dash; powered by truck's hydraulic system

Uses: Assembly provides 180° rotation of fork-truck forks in either right or left hand direction. Made for manufacturer's 2 and 3 ton "Yak" and "Yank" fork trucks. **Features:** Rotation is controlled by single handle adjacent to hoist and tilt handles on dash.

Description: "Roto-Lift" assembly is powered from hydraulic pressure system of truck through flexible pressure lines and electric limit switches. Double-acting hydraulic



Fork truck "roll-over" attachment

OMEGA



BELT TYPE GRAVIMETRIC FEEDER

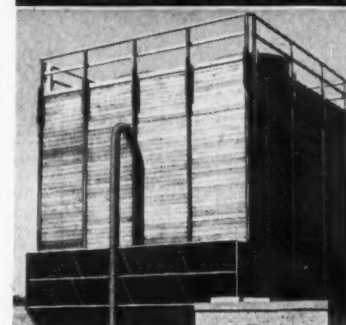
The Omega Belt Type Gravimetric Feeder weighs and feeds dry materials continuously, automatically, on a short conveyor belt carried on sensitive scales. Whether material is fine or coarse, feeding accuracy is maintained within 1%. Handwheel adjustment of variable speed drive gives infinite number of feeding rates from 10 lbs. to 10,000 lbs./hr. (100 lbs./cu. ft. material). Ideal for automatic and proportional feeding where high accuracy is essential. Write for Bulletin 24-27.

OMEGA MACHINE CO.

(Division of Builders Iron Foundry) 41 Coddling St., Providence 1, R. I.

When inquiring check CP 9763 on handy form, pgs. 2-3

Pritchard COOLING TOWERS



**Thoroughly
Engineered***

**...Adequately
Sized**

***For Longer Life
and Trouble-Free
Performance**



EQUIPMENT DIVISION
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in Principal
Cities

J.F. Pritchard & Co.
ENGINEERS • CONSTRUCTORS • MANUFACTURERS
for the CHEMICAL, PETROLEUM, GAS & POWER industries

When inquiring check CP 9764 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

MATERIAL HANDLING

cylinder and ram assembly drives ball-bearing-mounted turntable through spur gear drive. Fork carriage is mounted on the turntable.

Source: Product of Mercury Manufacturing Company, Dept. CP, 4020 S. Halsted St., Chicago 9, Ill. . . . or for more information check CP 9765 on handy form, pages 2 and 3.

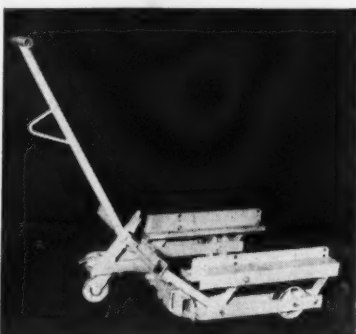
Lift truck's telescoping frame fits various sizes of tote pans . . .

one model handles pans 8"-16" wide; another has range of 16"-24"

Uses: For carrying wide variety of tote pans.

Features: Truck is made to accommodate pans of various sizes by loosening eight hollow head set screws to adjust for inside width and four bolts to adjust side plates for height.

Description: Truck capacity is 1000 pounds. Two styles are offered, a narrow model designed to handle tote pans from 8 to 16 inches wide and a wide model for pans



Adjustable tote pan truck

16 to 24 inches in width. The lowered height of the lifting forks can be adjusted from 2½ inches to 7½ inches. Forks are 22 inches long. They automatically lock in raised position and are released by a simple pedal arrangement.

Steering is simplified by means of a four inch swivel

caster mounted on the front of the truck. The capacity load rolls easily on two five inch wheels. Although the provisions for adjustment to tote pan size are not intended for very frequent use, the operation can be completed easily in less than ten minutes.

Source: Lyon-Raymond Corp., Dept. CP 1227 Madison St., Greene, N. Y. . . . or for more information check CP 9766 on handy form, pages 2 and 3.

Tubing, rods and flat plastic crated in cost-saving boxes

Extruded or lengthy objects up to 21'4" long are easily crated or packaged in cost-saving Laminite, according to 4-page descriptive folder. 16 photographs illustrate rigidity, light weight and versatility of this material. Channel boxes of this design can be spliced to lengths of 35', or sawed to short lengths. Low claim records by shippers are reported.

Typical applications include steel, aluminum, copper, brass and plastic tubing; flexible metal hose of 3" or more diam. (with savings in cubage); flat sheets of plastic; finished or unfinished metal parts; welding rods. Water and oil-repellent. Saws, nails or straps like wood; yet, tare weight is less than 50% of 1" lumber. Issued by Laminite Products, Dept. CP, 799 Washington St., New York 14, N. Y. When inquiring specify CP 9767 on handy form, pages 2 and 3.

APRIL, 1949

TRIPLE YOUR GLUE COSTS

"Attack is the best defense"

Napoleon



From a painting by J. David. Courtesy of the Metropolitan Museum of Art.

Meet rising competition with a better quality glue that will speed up production . . . reduce assembly line rejects . . . provide better protection during shipping and rehandling . . . present a more attractive product at the final point of sale.

Remember this: Low cost producers regard glue as a service—not a commodity—that definitely affects production and operating costs.

Here's an actual example: A field survey shows that container flaps that become unsealed during shipping cause 30.8% of all damage considered to be under the shippers' control. Think of what this adds to operating, labor and material costs!

The answer? National's multiple service case sealing glue that costs three times as much as ordinary glue.

SAFE-LOK seals with a tougher, more durable bond that is unaffected by temperature and humidity variations or the shipping impacts that ordinarily cause cases to open in transit and permit pilferage, breakage and the consequent loss of customers' good will or business.

SAFE-LOK requires less compression time . . . bonds a wider variety of container surfaces and stocks . . . gives greater effective mileage . . . and provides the higher sealing speeds needed to handle multiple feed labeling units.

SAFE-LOK — a light colored 'RESYN'® emulsion adhesive that comes ready for use — is now being used by the most aggressively sales-minded and cost-conscious companies in the country. Address: 270 Madison Ave., NEW YORK 16; 3641 So. Washtenaw Ave., CHICAGO 32; 735 Battery St., SAN FRANCISCO 11, and other principal cities. In CANADA: Meredith, Simmons & Co., Ltd., TORONTO and MONTREAL. In ENGLAND: National Adhesives, Ltd., SLOUGH.

National
ADHESIVES

EVERY TYPE OF ADHESIVE FOR EVERY INDUSTRIAL USE

When inquiring check CP 9768 on handy form, pgs. 2-3

General Ceramics vs. Corrosion! IN THE UNIT PROCESSES

● General Ceramics chemical process equipment—stoneware (Ceraware), porcelain (Cerawite), impervious graphite (Impervite)—serves best where corrosion is worst. It is not only corrosion resistant, but *corrosion proof*, answers the toughest problems of corrosion in handling all acids.

What's your problem?...

STORAGE

Chemical Stoneware Vessels vs. Corrosion

Answer: Bulletins 111 and "J"

FLUID FLOW

Chemical Stoneware, Porcelain, Impervite Pipe and Fittings vs. Corrosion

Answer: Bulletins 151, 165 and B-2776, GR.

HEAT EXCHANGE

Chemical Stoneware Coils, Impervite Heat Exchangers vs. Corrosion

Answer: Bulletin GR and 175

FILTRATION

Chemical Stoneware and Porcelain Filters vs. Corrosion

Answer: Bulletin 271.

Write for the Bulletins that answer your particular corrosion problems... Write for Bulletin No. CHE-R3 for a description of the full scope of GC's manufacturing and service.

YOU SAVE 3 WAYS WITH GENERAL CERAMICS' SSS*

Savings through uniformity of construction... no misfits.

Savings on shipping costs... one shipment for everything.

Savings on paper work, accounting... one order, one bill.



General Ceramics AND STEATITE CORP.

CHEMICAL EQUIPMENT DIVISION

25 Crows Mill Road

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Our Insulator Division Manufactures Steatites, Porcelains, Titanates, Ferrites

*Single Source of Supply.

☎ 4787

When inquiring check CP 9769 on handy form, pgs. 2-3

Page 80

Change Control Valves from Direct to Reverse Operation without Dismantling

Reversible topwork permits change by simple adjustment; used in air, steam, liquid service

Uses: To meet the need for a small, compact control valve that could be readily changed from "air to close" to "air to open". Suggested for service in pilot plant, research laboratories and other installations in chemical, refinery, and power fields for gas, air, steam or liquid applications.

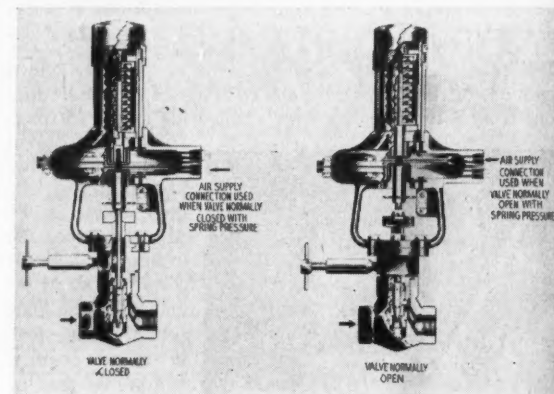
Features: Type 1515 valve is constructed with reversible top works which allows it to be changed from a direct operating unit to a reverse unit with a simple adjustment, in a few minutes. Inner valve and seat ring are designed for the range of flow conditions within the limitations of the valve.

Description: This type valve has a screwed bonnet construction. Cooling fin sections are recommended for temperatures exceeding 450 degrees F. The topwork is made of cast aluminum and steel tubing. A unique pressure seal in the diaphragm case reduces friction which would be present if a standard type seal were used in such an application.

This unit is available with metering pins having flow areas of 0.006 sq. in., 0.024 sq. in. and 0.039 sq. in. Standard needle valves are furnished for orifices from 1/8 inch to 3/8 inch diameter. Metering pin blanks are available for service where special metering pins are required to be made on the job for the particular application.

The type 1515 valve is constructed with a forged steel, globe style, screwed end body in sizes of 1/4", 3/8", 1/2",

3/4" and 1" with working pressures of maximum inlet 3000 psi at 100 degrees F. Seat rings and inner valves are furnished of 18-8 stainless steel. Special alloys are available for bodies, stuffing boxes, seats and inner valves on special order only.



Diaphragm control valve has reversible topwork

Source: Type 1515 diaphragm control valves are built by Climax Engineering Co., Dept. CP, Tulsa 1, Okla. . . or for more information check CP 9770 on handy form, pages 2 and 3.

Handle sulphuric acid with special austenitic stainless steel pipe, fittings . . .

alloy has sufficient nickel to hold copper in solution

Uses: These fittings in the wide selection in which they are offered provide for a wide range of service where resistance to corrosion is required. The first series meets requirements where stainless steel is specified. The second series is designed for superior service against sulphuric acid corrosion. A partial list of corrosive agents for which the second series is also satisfactory includes acetic acid, all strengths, alum, ammonium hydroxide, brine, formic acid (and with acetic acid, nitric acid, oleum, etc.)

Features: Included in the popular analysis fittings offered is a socket or butt-weld type where installations must be as light in weight as possible and yet be entirely adequate for the job. These butt-weld fittings are, in many cases, the answer to such requirements, since through their use the added weight and bulk of flanged connections is avoided.

The superior corrosion resistance of Alloy 20, used in the

second series, is of particular interest. The rate of corrosion of 18-8s by 10% sulphuric acid at 125 degrees F is over 100 times greater than the rate of attack on Alloy 20. A similar difference in corrosion resistance is observed on 80% acetic acid at 176 degrees F. In such cases the copper content in the normal 18-8 alloy will go into solution at a more rapid rate than that in Alloy 20 when used on the same corrosive.

Description: Esco stainless fittings in the popular analyses are offered in IPS screwed fittings, flanged fittings, socket welded fittings, butt-welding fittings. Flanges and spuncast pipe are also available.

The alloy contains sufficient nickel to hold the copper in solution, which is essential for resistance to sulphuric acid. The chromium and molybdenum contribute additional resistance to oxidizing acids, and the analysis of the resulting alloy is a well balanced austenitic steel having the properties of the 18-8 group.

Alloy 20 can be supplied in the form of special castings as well as valves, fittings, pipe, agitators, impellers and many other items.

CHEMICAL PROCESSING Preview

A recommendation for the use of Alloy 20 in any given type of service should only be made upon the basis of a careful study of the specific conditions existing in the application concerned.

Fittings are available in both the popular analysis and Alloy 20 up to 14" IPS to Standard IPS and flange specifications. Alloy 20 products are produced under license of Duriron Co.

Source: Electric Steel Foundry, Dept. CP, 2141 W. 25th Ave., Portland 10, Ore. . . or for more information check CP 9771 on handy form, pages 2 and 3.

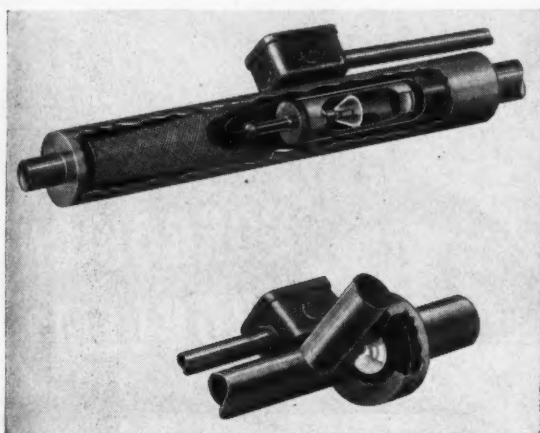
Smoke from smoldering fire enters detector, rings alarm before flames spread . . .

filter screen in analyzer tube removes dust before air-stream intercepts photoelectric beam

Uses: Gives early warning of incipient fires in hazardous plant and warehouse areas, or in places unfrequented by personnel. Detects smoke.

A useful adjunct to built-in carbon dioxide fire extinguishing systems of manual or automatic operation, if smoke detector circuit is tied in with controls to operate ventilating dampers, door-closing releases or electrical equipment power cut-off.

Features: Often betrays presence of smoke before thermostatic or heat actuator alarms or devices are affected, manufacturer reports, in cases where fire starts slowly,



Air sample enters inlet end of analyzer tube (top), passes through filter, over lamp cooling fins. Outlet end of tube houses photoelectric cell and air-sample exhaust passage

smoulders, and produces smoke for some time before actually bursting into flames.

Control panel "nerve center" of unit not only transmits fire alarms, but also warns of mechanical or electrical disturbances within the apparatus.

Description: In operation, a continuous sample of air is drawn from protected space through an individual piping system into an analyzer tube. Here, it passes through a filter screen to remove dust and dirt, then into a light-beam focused on a photoelectric cell.

Smoke in air sample reduces amount of light reaching cell and sets off alarm connected through an electrical circuit to a control panel. Principles employed in this smoke detector are similar to those of maker's marine-type detectors, made since 1917.

Source: Produced by Walter Kidde & Company, Inc., Dept. CP, Belleville, N. J. . . or for more information check CP 9772 on handy form, pages 2 and 3.

APRIL, 1949



This IOI Gas-Fired Latexing Machine Provides Complete One-Man Process Control

SOUND ENGINEERING, rugged construction, compact design, operating economy—these are some of the basic reasons why this IOI latexing machine, shown above from the wind-up end, yields maximum returns on the investment it represents. Typical of its many outstanding features is the completeness of one-man control of the latexing operation which it makes possible.

In operation at the Inland Rubber Corporation, Chicago, this IOI medium-duty, gas-fired unit is currently operating at 28 YPM. Using two large capacity air heaters, it represents the first practical and successful application of gas in a fabric latexing machine.

The same advantages which characterize this machine—superior engineering, and construction, small space requirements and low operating costs—are incorporated in heavy-duty IOI latexing machines designed for operating speeds of 60 YPM and above. Units are for weftless or woven fabric latexing in train with rubber calender or as a separate operation.

For complete information on IOI Coating and Handling Equipment for Textiles, Papers, Films and Foils write for "Blueprint for Industry, Part V"—or an IOI engineer will be glad to call in person if you prefer.

RUBBER COATING SYSTEMS • WIRE COATING SYSTEMS • PLASTIC COATING SYSTEMS

FABRIC COATING SYSTEMS • INDUSTRIAL OVENS—ALL TYPES, BATCH AND CONVEYORIZED

INDUSTRIAL



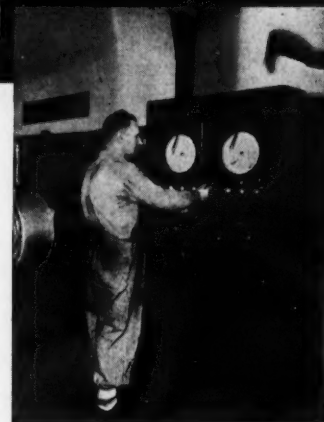
OVENS, INC.

13825 TRISKETT ROAD

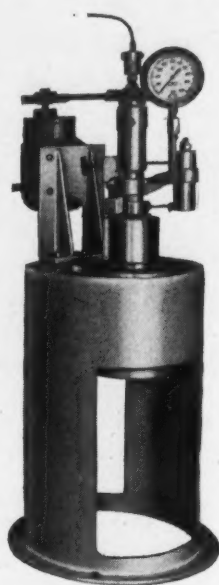
CLEVELAND 11, OHIO

ASSOCIATED COMPANY: JAMES' DAY MACHINERY LTD., LONDON W.1. ENGLAND

When inquiring check CP 9773 on handy form, pgs. 2-3



Panelboard of operating control gear which gives operator complete mastery over every phase of the machine's operation. Note safety dials and main DC control. One of the two direct, gas-fired air heaters is at the left.



1 Liter

HIGH PRESSURE Autoclave

For pressures to 5000 p.s.i.

Complete, self contained, including choice of electric or jacketed type heating, floor stand, automatic pressure lubrication at stuffing box, blow out assembly and explosion proof motor, ready to operate.

\$995

A new and improved research tool for laboratories.

Machined from stainless steel forgings for operating pressures up to 5000 p.s.i. and temperatures to 650°F. Agitation up to a maximum of 1000 r.p.m. available and can be varied through a variable pitch pulley at motor. Agitator internally water cooled at packing.

Accessories are available including liners, making possible the processing of as little as 25 cc.

Ask for Catalog 100-D

LABORATORY & PILOT PLANT HIGH PRESSURE EQUIPMENT

AUTOCLAVE



ENGINEERS

AFFILIATED WITH PRECISION SCIENTIFIC COMPANY

860 EAST 10TH STREET • ERIE, PENNSYLVANIA

When inquiring check CP 9774 on handy form, pgs. 2-3

Page 82

PROCESSING EQUIPMENT

Ferrous particles removed by magnetic pulleys

Tramp iron responsible for product contamination, machinery damage, fires and explosions is removed by magnetic pulleys used in conjunction with belt conveyor systems, or by self-contained pulley-type separators used below chutes, ducts, spouts, etc. Installation photographs, table of dimensions and capacities, and descriptions of specialized separators are included in 16-page, 2-color catalog.

Pulleys are described as being available with waterproof, greaseproof, or heat resistant construction for special needs. Cat. C-1001A, issued by Dings Magnetic Separator Co., Dept. CP, Milwaukee 14, Wis. When inquiring specify CP 9775 on handy form, pages 2 and 3.

52,000 openings and closings leave valve seat unworn . . .

chatter-free ball valve undaunted by repeated use at 300 psi, field report shows

Uses: Valving applications at normal or high temperatures, to 300 lbs water, oil or gas pressure.

Features: Long-lived: one field report reveals that valve showed no wear, and ball and seat looked like new, after 52,000 openings and closings under 300 lbs pressure. No chatter when opening, closing or throttling. Improved flow characteristics result from shape of ball.

Description:

Precision-ground stainless steel ball replaces customary discs, poppets, etc. Ball is spun into its retainer, allowing slight clearance which permits ball to spin when valve is opened or closed. This permits the ball to find a new seat each time.

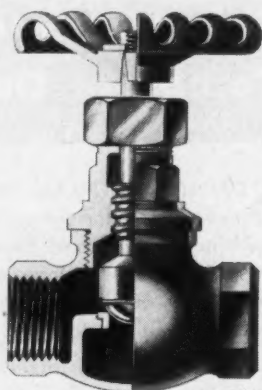
O-ring seals are used for normal service where high temperatures are not involved. Conventional steam packing is used for steam or other high-temperature service.

Ball valves are available in 1/2 and 3/4" pipe sizes, in brass, at present.

Source: Development of The Carpenter Manufacturing Corporation, Dept. CP, 9523 Detroit Ave., Cleveland 2, Ohio . . . or for more information check CP 9776 on handy form, pages 2 and 3.

High temperature and current uses of selenium rectifiers

Selenium rectifiers are thoroughly discussed in 16-page, 2-color bulletin. Operation practices are treated, with instructions for use at 250% of current rating and in ambient temperatures up to 90°C. Charts and tables illustrate forward and reverse resistance characteristics, pointing out that negative coefficient of resistance, with respect to temperature, provides temperature regulation.



Illustrates construction of ball valve



Write for these two
SPEEDAIRE bulletins

LEARN how Speedaire, Cleveland's fan-cooled, worm-gear speed reducer saves money, space and weight.

Because it is fan-cooled, Speedaire will do more work—will deliver up to double the horsepower of standard worm units of equal frame size.

Ask for Catalog 300 and "More Horsepower Per Dollar". The Cleveland Worm & Gear Company, 3257 East 80th Street, Cleveland 4, Ohio.



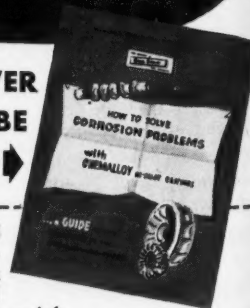
CLEVELAND
Worm Gear
Speed Reducers

For personalized service:
Write or phone John E. Milligan
Cleveland exch. V Ucan 3-4560

When inquiring check CP 9777 on handy form, pgs. 2-3

CORROSION PROBLEM?

YOUR ANSWER
MAY BE
HERE



FREE BOOK GIVES FACTS. Send for this folder on Chemalloy corrosion resistant castings. You'll find it a handy guide to the quick selection of the right alloy for the job. 176 specific corrosive media are listed with suggested alloy grades for each. It gives you the answers to corrosion problems quickly. Included also is complete information on Chemalloy—the corrosion resistant alloy. Send today for your free copy. Address: Electro-Alloys Div., 1921 Taylor St., Elyria, Ohio.

Thermalloy for Heat and Abrasion Resistance...
Chemalloy for Corrosion Resistance...

AMERICAN
Brake Shoe
COMPANY

ELECTRO-ALLOYS DIVISION
ELYRIA, OHIO

When inquiring check CP 9778 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

Circuit formulas and constants are given; aging, regulation and capacitance are explained. Includes sizes and ratings. Bul. RDP-112, issued by Fansteel Metallurgical Corp., Rectifier Division, Dept. CP, North Chicago, Ill. When inquiring specify CP 9779 on handy form, pages 2 & 3.

Design of discharge check valve minimizes sediment fouling . . .

prevents back-surge contamination in waste-liquid pipelines of gravity-flow installations

Uses: Installed in discharge lines carrying steam, sludge, waste water and other waste liquids in gravity flow installations, check valve protects against contamination of liquids, fouling of pumps and equipment, etc.

Features: Location of swing check flap in relation to interior of valve body, and other design features, minimize fouling of valve.



Discharge check valve

Description: Swing check flap is suspended from full-floating pin fulcrum to assure positive and full surface contact between ground face of flap and flap seat. Knob in center of top surface of flap contacts valve body roof at only one point when flap is wide open. This assures free operation of flap by preventing it from touching sides of valve body. Flap is easily removed

and replaced, permitting simple cleaning and maintenance.

Discharge check valves may be operated with or without a manual control, or with extension shaft of flexible cable from access box. Units are hydrostatically tested.

Flanges are 150-lb flat-faced and blank, or drilled as specified. Available with 180°, 105° or 90° bodies made of cast bronze, steel, semi-steel, cast iron, or alloy metals for corrosion resistance.

Line is composed of 19 different types. Valve illustrated is 180° straight type with vertical auxiliary control.

Source: Manufactured by J. A. Zurn Mfg. Co., Dept. Z-8, Dept. CP, Erie, Pa. . . or for more information check CP 9780 on handy form, pages 2 and 3.

Wall chart gives tap drill sizes

American National Screw Thread Pitches, as established in 1928, are shown on 13 x 19" wall chart. Sizes of threads, threads per inch, outside diameter of screw, tap drill sizes are given for National Coarse Standard Threads, formerly U.S.S.; National Fine Standard Threads, formerly S.A.E.; and Special Threads.

"Tap Drill Sizes"; remit 10c in coin directly to South Bend Lathe Works, Dept. CP, 355 E. Madison St., South Bend 22, Ind.

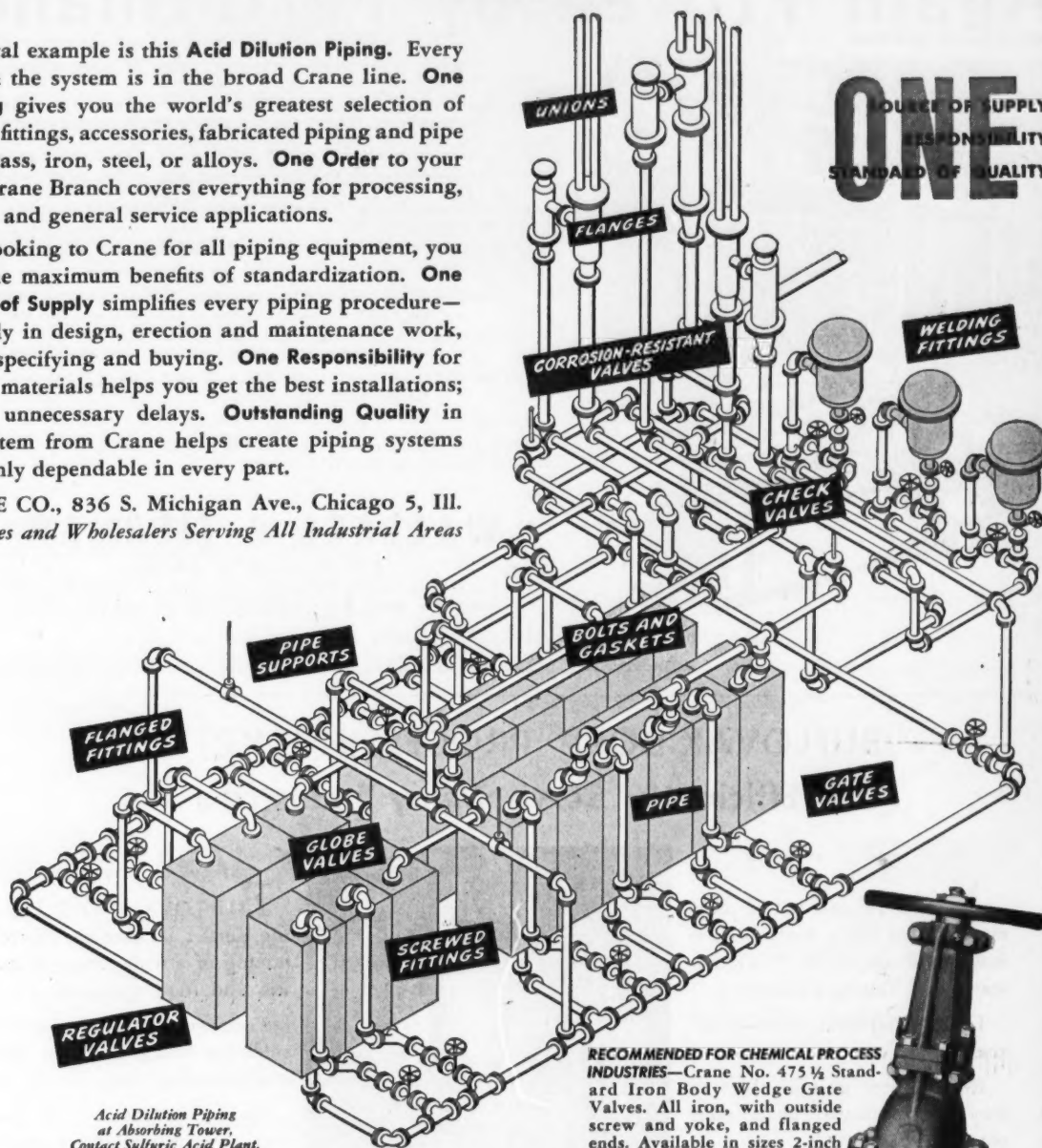
APRIL, 1949

Everything in process piping from a single source...CRANE

A typical example is this Acid Dilution Piping. Every item in the system is in the broad Crane line. One Catalog gives you the world's greatest selection of valves, fittings, accessories, fabricated piping and pipe—in brass, iron, steel, or alloys. One Order to your local Crane Branch covers everything for processing, power, and general service applications.

By looking to Crane for all piping equipment, you gain the maximum benefits of standardization. One Source of Supply simplifies every piping procedure—not only in design, erection and maintenance work, but in specifying and buying. One Responsibility for piping materials helps you get the best installations; avoids unnecessary delays. Outstanding Quality in every item from Crane helps create piping systems uniformly dependable in every part.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas



Acid Dilution Piping at Absorbing Tower, Contact Sulfuric Acid Plant.

RECOMMENDED FOR CHEMICAL PROCESS INDUSTRIES—Crane No. 475 1/2 Standard Iron Body Wedge Gate Valves. All iron, with outside screw and yoke, and flanged ends. Available in sizes 2-inch and larger. Cold rating up to 200 pounds. For handling sulfuric acid of strength between 90% and 100%. See your Crane Catalog, pp. 101-6.



EVERYTHING FROM . . .

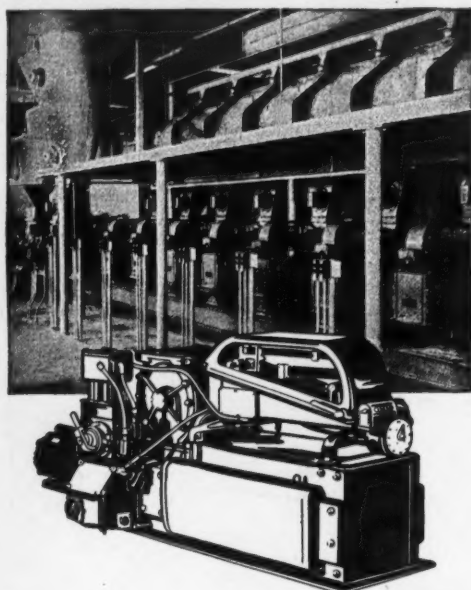
VALVES • FITTINGS
PIPE • PLUMBING
AND HEATING

CRANE

FOR EVERY PIPING SYSTEM

When inquiring check CP 9781 on handy form, pgs. 2-3

W & T Merchen Scale Feeders— Again Proven by Performance



W&T Merchen Scale Feeders, blending BY WEIGHT once again have proven their worth as reliable, economical feeders.

A typical example of their dependable foolproof operation is shown in the installation pictured. All 9 of these feeders are interlocked for automatic, continuous blending operation. The installation is designed so that if bridging or arching in hoppers occurs or if any feeder is starved of material the entire blending operation will automatically stop — thus protecting the formula. In addition, each feeder motor can be manually operated by push button and as an added safety feature, any power failure will automatically shut down the entire system.

Other major design characteristics of W&T Merchen Scale Feeders include:

CAPACITY—9" Belt—from a few ounces up to 500 pounds per minute.
18" Belt—from a few ounces up to 3000 pounds per minute.

FEED RANGE—a wide range of feed rates and arrangements is possible to accommodate different materials and operating conditions.

FEED REGISTER—permits calculation of total amount fed during any given period.

CONSTRUCTION—sturdy, dust tight and corrosion resistant.

Write now and learn how feeding BY WEIGHT with the W&T Merchen Scale Feeder can cut your feeding costs.

M-6

**WALLACE & TIERNAN
COMPANY, INC.**

CHLORINE AND CHEMICAL CONTROL EQUIPMENT
NEWARK 1, NEW JERSEY • REPRESENTED IN PRINCIPAL CITIES

When inquiring check CP 9782 on handy form, pgs. 2-3

BUFLOVAK-DOPP PROCESSING KETTLES Efficiently Serve Many Industries

YOUR product can be processed in this Dopp Kettle that is installed in the BUFLOVAK Research and Testing Laboratory.

Larger equipment is also available.

Results are positive because they are conducted on a pilot plant scale.

Write for particulars.



BUFLOVAK-DOPP Processing Kettles are used for thorough mixing of a wide range of chemical and food products.

Performance records show considerable savings in steam, power and operating time.

Exclusive features in design and construction assure uniform mixing, heating and cooling. The result is a better, more uniform product, produced at lower cost!

Complete details upon request.

**BUFLOVAK EQUIPMENT DIVISION
of BLAW-KNOX COMPANY**
1645 Fillmore Ave. Buffalo 11, N. Y.

When inquiring check CP 9783 on handy form, pgs. 2-3

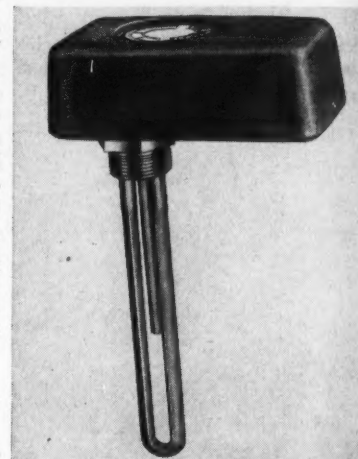
PROCESSING EQUIPMENT

Convert fuel-fired water heaters with screw-in electric units . . .

units may be used singly or doubly in tanks up to 80 gallon capacity

Uses: Designed for conversion of standard fuel fired hot water tanks to electricity. Especially suitable for industrial applications where limited amounts of hot water are required.

Features: The heating element is a high quality Chromolox copper-sheathed, enclosed type tubular heater brazed into a one-inch red brass screw plug with a sealed brass well for the sensitive thermostat bulb. The thermostat, complete with removable housing, is mounted directly on the screw plug, and may be set to control water temperature between 100 degrees and 170 degrees. The well is so located as to be in contact with the element for protection if water level should drop below the element.



Screw-in water heater

Description:

Series Type ARTM is available for 118 or 236 volt service and wattages of 750, 1000, 1250 and 1500. Units may be used singly or doubly in tanks up to 80 gallon capacity.

Source: Edwin L. Wiegand Co., Dept. CP, 1517 Thomas Blvd., Pittsburgh 8, Pa. . . . or for more information check CP 9784 on handy form, pages 2 and 3.

Versatile, fast dissolver has lab, pilot plant uses . . .

handles viscosities up to 40,000 centipoises, and batches of 2 to 40-gallons

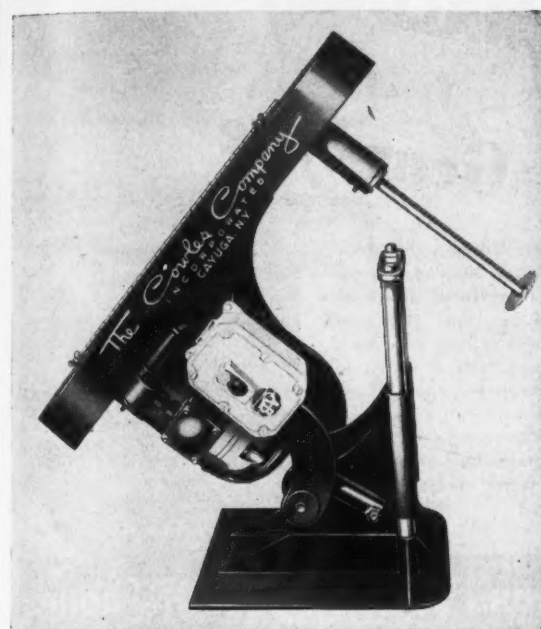
Uses: Dissolver for small batch and pilot plant applications in the ultra-fast field. For viscosities ranging up to 40,000 centipoises.

Inversely, according to flow characteristics of materials processed, it is for batch capacities of 2 to 40 gals. Intended for use in containers brought to the machine. Ordinarily run at impeller rim-velocities of 2500 to 5000 fpm. Lower ranges are used for agitation or blending; upper ranges for dispersions and difficult solutions. Middle range adapts to a great many solutions and the easier dispersions.

Features: Permits wide range of sheave ratios and speeds, and the use of 4", 6" or 8" impellers. Range of selectivity, and adjustment to varying viscosities through size of the batch processed at one time, make for great versatility.

Description: As a container is brought to the machine, impeller is immersed by tilting the bridge which carries impeller, drive and motor. Coil springs serve as both snubbers and boosters to facilitate tilting. Vertical eleva-

CHEMICAL PROCESSING Preview



Small, ultra-fast dissolver

tion of impeller for efficient positioning in tank is done by hand-jackscrews traveling an extreme range of 11".

Motor and starter are mounted rigidly to support. Bridge is attached to 4 studs, permitting horizontal movement for belt adjustment. Unit is equipped with 3 hp motor and variable-speed V-belt drive. An addition to manufacturer's line of "Ultra-Fast" dissolvers.

Source: Produced by The Cowles Company, Inc., Dept. CP, Cayuga, N. Y. . . . or for more information check CP 9785 on handy form, pages 2 and 3.

Visible in-line straining for operations up to 50 psi and 160°F . . .

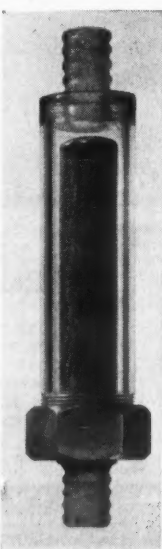
Lucite and stainless steel syrup spy is stable to most acids and alkalis

Uses: Sight line strainer and syrup spy for visible in-line straining. For operations up to 50 psi and 160°F. Stable to most acids and alkalis, although affected, of course, by certain organic solvents such as acetone, glacial acetic acid, etc. For 3/4 or 1" ID hose or tubing.

Features: Won't break or corrode. Sanitary. Easy to clean. Only three parts. Large, 13 sq. in. filtering area. Saves time and maintenance costs, at the same time protecting product.

Description: Lucite body and end pieces, with 40-mesh stainless steel strainer. Two Tygon gaskets. Aluminum alloy coupling nut. Length, 8". Weight, 6 oz.

Source: Made by Jacob House & Sons, Dept. CP, 52-54 St. Paul St., Buffalo 8, N. Y. . . . or for more information check CP 9786 on handy form, pages 2 and 3.



Syrup spy

Read the Facts about READ Chemical Equipment



Flush Plug Gate Model, Read Ribbon Blenders for the Chemical Industry

FLUSH PLUG DISCHARGE
means no dead material at any time

IN BLENDERS, the elimination of dead material at the discharge point, plus the liquid-type flush plug discharge gate, assure you of efficient blending on a minimum operating cycle. Their rugged construction means longer life.

READ Ribbon Blender Advantages:

- Gate control handle placed either end, either side, or top to suit your needs.
- Gate is operated by self-locking worm and worm wheel.
- Blend any dry granular material; any moist or light mass material.
- Counter-flow action to insure rapid, efficient mixing without material build-up at the ends. Agitator removed by slotted end or coupling.
- Offered in batch capacities of from 1 to 500 cu. ft. Special units are custom-built for larger capacities.
- Models can be supplied for operation under pressure or full vacuum; can be equipped with temperature controlling jackets, to suit the application. Legs supplied in various heights to suit operating conditions.

BRING YOUR BLENDING PROBLEMS TO READ

MAKERS OF **READCO** CHEMICAL EQUIPMENT

**WHAT'S YOUR NEED?
CALL ON . . .**

READ

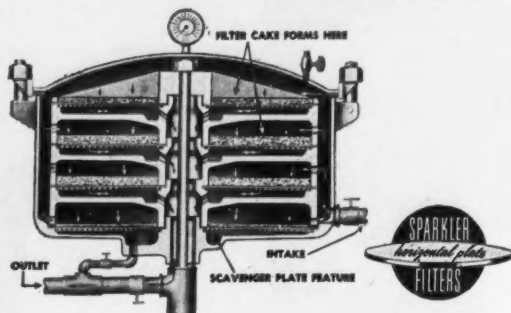
MACHINERY DIVISION

of THE STANDARD STOKER COMPANY, INC.
YORK, PENNSYLVANIA

Write for literature and specifications on Read Blenders.

When inquiring check CP 9787 on handy form, pgs. 2-3

SPARKLER horizontal plate FILTERS



... efficient and reliable in the process of solvent recovery

In Sparkler Horizontal Plate Filters the filter cake rests flat on the supporting metal plate without tensile or distortive strain. In this position the cake will not crack under pressure and complete dependable filtration is assured.

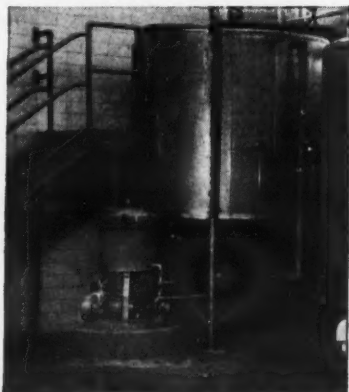
Practically every kind of liquid from light alcohols to heavy resins can be filtered in a Sparkler Filter. Filters can be designed and constructed for any particular type of fluid to be filtered. Steam jacketed models where required and brine jacketed models when cooling is necessary. Tanks and working parts are made in a range of materials including stainless steel, mild steel, bronze, nickel, monel, or rubber lined steel. Explosion proof motor equipment used when required. Filter plates are available in two depths, deep plates for liquids carrying a large percentage of solids; shallow plates for liquids carrying only a small percentage of solids, the latter providing a larger filtering area within the same size tank.

Sparkler Filters are equally efficient for continuous or intermittent operation. Complete recovery of product is obtained by "wash through" or "blowdown" of cake without removal from filter. The Sparkler patented scavenger plate acts as an auxiliary filter with independent control valve, filtering each batch down to the "last drop," leaving no hold-over.

Sparkler Horizontal Plate Filters are made in a range of sizes from the small laboratory pilot plant models to the standard plate models of 50 G.P.H. to 5000 G.P.H.

Our engineers are ready to cooperate in solving any problem of filtration. Write E. S. Anderson, Industrial Sales Dept.

In the recovery of naphtha and benzol solvents at the Bayer Aspirin plant Sparkler Horizontal Plate Filters are installed in the processing line.



SPARKLER MANUFACTURING COMPANY
Mundelein, Illinois

When inquiring check CP 9788 on handy form, pgs. 2-3

Page 86

PROCESSING EQUIPMENT

Rotate table fan in 360° arc by means of special bracket . . .

delivers 500 cfm; ultra-quiet, vibrationless

Uses: As a table fan for direct cooling in shop or office.

Features: Fan is mounted on a special bracket with smooth friction pivots so that the fan can be turned to direct air straight up, down, horizontally or at any angle in a full 360 degree vertical arc. Ultra-quiet and vibrationless.

Description: Shaded pole induction motor for AC only, 105-120 v., 50, 60 cycles. Gray wrinkle finish on base and motor housing, bright plated steel wire guard, bright finish aluminum blades, bright plated bracket and fittings. Weight 4½ pounds.

Fan has full rubber molding around 8" base to make it steady and safe to use on any surface. It delivers 500 cfm, NEMA rating and is approved by Underwriters' Laboratories.

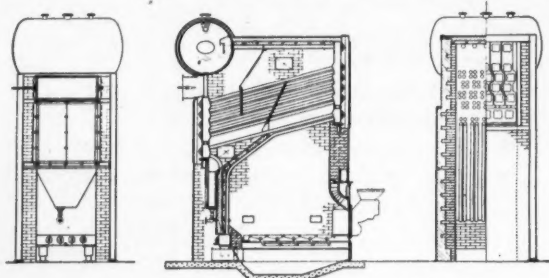
Source: "Surf" 10-inch fan is built by G-M Laboratories, Inc., Dept CP, 4300 North Knox Ave., Chicago, Ill. . . or for more information check CP 9789 on handy form, pages 2 and 3.

Speed delivery, erection of boilers by standardization, shop assembly . . .

"building block" principle inherent in sectional header design; sections used determine width

Uses: For power, process and heating service in small to medium size plants and for standby service in larger plants where a boiler built to large plant specifications is desired.

Features: All parts are externally supported for simple erection and easy accessibility. Through the use of a distinctive water wall type construction on the rear wall and arch over the combustion chamber, a considerable portion of the total steam generating surface has been disposed to absorb radiant heat with a consequent benefit to operating



Rear, side and front sectional views of boiler

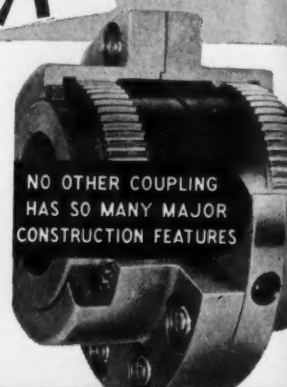
efficiency and reduction of furnace maintenance requirements.

Erection at the user's location is facilitated by shop assembly of a considerable portion of the parts, including the header sections with built-in refractory-filled cast iron baffles. Installation is further simplified by provision of complete structural steel framing to receive standard dimension refractory and insulating materials.

Description: This series of six new standard water tube boilers in the maker's type M line are especially designed for coal firing with standard stokers, but can also

WALDRON
Improved
Gear Type

USED BY
AMERICA'S
LEADING
MACHINE
BUILDERS



Users recognize the WALDRON Coupling as the most advanced design of the Gear Type. Compare it with ordinary types from a standpoint of shaft size, horsepower, speed and service. For design and construction details, ratings, service factors, etc.—write for descriptive catalog.

JOHN WALDRON CORP.
Main Office and Works
New Brunswick, New Jersey
COUPLINGS

When inquiring check CP 9790 on handy form, pgs. 2-3

PREVENT ACCIDENTS
by using **AMERICAN COUNTER-TRED MATTING**

A durable rubber and cord matting with a resilient non-slip surface for use in wet or slippery areas. Provides safety underfoot. Ridged bottom affords aeration and drainage. Easily handled for cleaning. Keeps the feet dry. ¾" thick. 24" wide, any length.

—also—

AMERIFLEX HARDWOOD LINK MATTING
TUF-TRED TIRE FABRIC MATTING
NEO-CORD OIL AND GREASE RESISTANT COUNTER-TRED MATTING
EZY-RUG RUBBER LINK MATTING
PERFORATED CORRUGATED MATTING

For prices and folder, "A Mat for Every Purpose" for promoting safety and sanitation and reducing fatigue, write

AMERICAN MAT CORPORATION
"America's Largest Matting Specialists"
1798 Adams St., TOLEDO 2, OHIO

When inquiring check CP 9791 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

PROCESSING EQUIPMENT

be readily adapted to oil or gas firing without any major change in the installation.

The size range is from 7500 to 17,000 pounds per hour steam generating capacity. Performance characteristics permit near straight-line operating efficiency over a wide range.

Of interest is the standardization of dimensions for various size units. The boilers are made with two standard tube lengths, 10 feet and 12 feet. These are expanded into sinuous electric steel sectional headers. Furnace width varies from 4 feet 7½ inches to 9 feet, depending on whether five, six, seven, eight, nine or ten header sections are used.

All boilers in the line have 48 inch diameter, welded, X-rayed, and stress-relieved steam drums built to various pressure standards ranging from 160 to 320 psi. The overall setting height is 18 feet for all sizes.

The standardized construction for boilers of different sizes is made possible by utilizing the "building block" principle inherently present in the design of these boilers. In effect, only the width varies according to the number of sections used. This same standardization makes it possible for the maker to maintain stocks of component parts from which any size unit can be quickly assembled and shipped, thereby shortening the time required for boiler delivery.

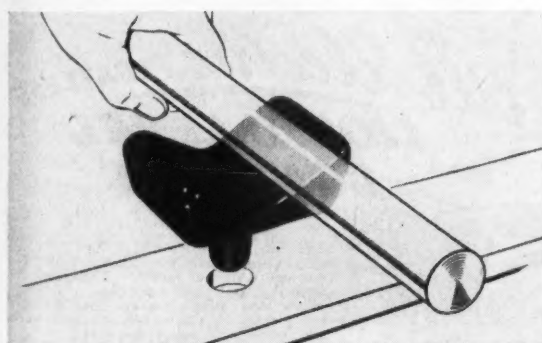
Source: Type M. boilers — 7500 to 17,000 pounds — are built by Springfield Boiler Co., Dept. CP, 1903 East Capitol Ave., Springfield, Ill. . . or for more information check CP 9792 on handy form, pages 2 and 3.

Unbreakable anode rod support saves installation time . . .

non-ferrous metal unit is fully covered with tough, semi-hard rubber

Uses: Anode rod support.

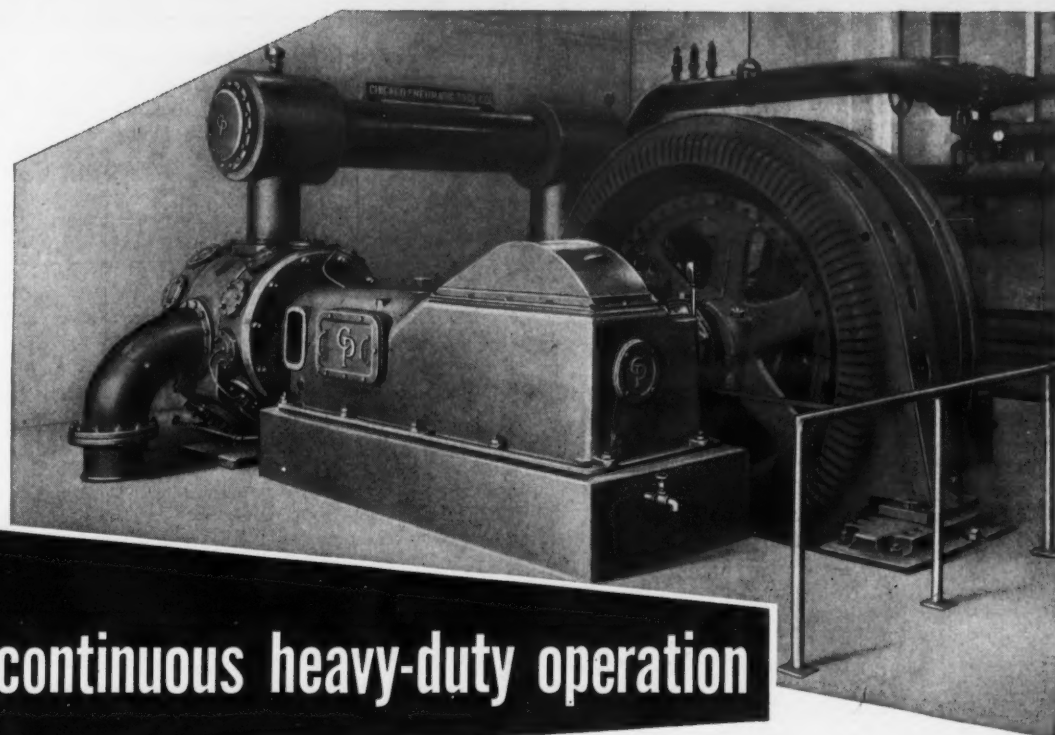
Features: Unbreakable. Self-aligning. Eliminates possibility of bolts corroding or getting lost. Saves time lost in installing conventional breakable type, as when bolts do not line up.



Unbreakable anode rod support

Description: Of non-ferrous metal fully covered with tough, semi-hard rubber. Pin of support sets in hole in tank flange. Support-pivots compensate for misalignment, and will support excessive loads and rods up to 4". Bulletin 250.

Source: Automotive Rubber Company, Inc., Dept. CP, 8601 Epworth Blvd., Detroit 4, Mich. . . or for more information check CP 9793 on handy form, pages 2 and 3.



for continuous heavy-duty operation

O-CE COMPRESSORS

When the demand is for a continuous, economical supply of air, the CP motor-driven O-CE COMPRESSOR is unsurpassed.

Quick-acting Simplate valves minimize power consumption and provide high volumetric efficiency. Large, stream-lined air passages make air flow resistance negligible. CP Multi-Step Control handles partial load demands economically. CP Intercooler assures maximum heat transfer with low water consumption. CP Automatic Starting Unloader completely unloads compressor when starting and stopping.

The CP heavy-duty, conservatively rated Class O-CE Compressor is of the horizontal, double-acting, water-cooled type, with direct-mounted synchronous motor drive; in sizes up to 1,750 h.p., for pressures up to 5,000 pounds.

Write
for full
information.



**CHICAGO PNEUMATIC
TOOL COMPANY**

General Offices: 8 East 44th Street, New York 17, N. Y.

ELECTRIC TOOLS • PNEUMATIC TOOLS • AIR COMPRESSORS • ROCK DRILLS
DIESEL ENGINES • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

When inquiring check CP 9794 on handy form, pgs. 2-3

ALOYCO GATE VALVES

**earned
leadership
the hard way**

SOME manufacturers earn leadership—some just claim it. ALOYCO GATE VALVES have gained and held their leadership by toil and sweat, mixed with hard thinking, on the problems of corrosive-fluid pipe lines, exclusively.

This leadership has been earned by sound, service-proven design — by foundry craftsmanship that produces uniformly dependable castings — by seasoned experience in the selection of the optimum alloy for specified corrosive conditions — by skilled machine shop practice that insures utmost



No. 111, 150 lb.
ALOYCO GATE VALVE

mechanical efficiency in the finished valve.

You can have the best. Why run the risk of costly replacement tie-ups with anything less?

ALLOY STEEL PRODUCTS COMPANY

1302 Elizabeth Ave.

Linden, N. J.

ALOYCO
Stainless Steel
VALVES and FITTINGS

GATE VALVES - GLOBE VALVES
Y VALVES - CHECK VALVES
SAFETY VALVES - ANGLE VALVES
FLANGES, SCREWED and ORIFICE FITTINGS
GASKETS - GASKET RINGS

When inquiring check CP 9795 on handy form, pgs. 2-3

PROTECT

Delicate Parts with

Edward
STRAINERS

At no time are delicately adjusted parts of your pumps, traps, and valves safe from damage by foreign matter in pipe lines, old or new, without protection. An Edward strainer gives you dependable protection and handles steam, oil, and vapor service up to 600 lb at 850 F and hydraulic service up to 1440 lb at 100 F. Simple and practical, there are only a few parts.

1. Body of forged steel.
2. Rustproof Monel metal perforated screen, with straining surface about seven times pipe area.
3. Bonnet held firmly in place by steel union ring. Drain plug easily removable to blow out accumulated foreign matter. Available in sizes 1/4 in. to 2 in.

**WRITE FOR
NEW BULLETIN**

New free bulletin No. 712 contains latest design details, dimensions, weights, and maintenance and cleaning information. Write today.

Edward Valves, Inc.
SUBSIDIARY OF ROCKWELL MANUFACTURING COMPANY
EAST CHICAGO, INDIANA

When inquiring check CP 9796 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

Proportioned needle-point gives graduated control . . .

corrosion-resistant throttle valves have large seat-opening for greater flow capacities

Uses: To regulate flow of corrosive liquids.

Features: Proportioned needle point gives graduated control of flow from closed to wide open position. Back-seating on stem makes it possible to change packing while valve is under pressure.

Description: Available in all types of corrosion resisting metals. Max. temp. 550°F, max. press. 2000 psi, 1/4", 3/8", or 1/2" sizes.

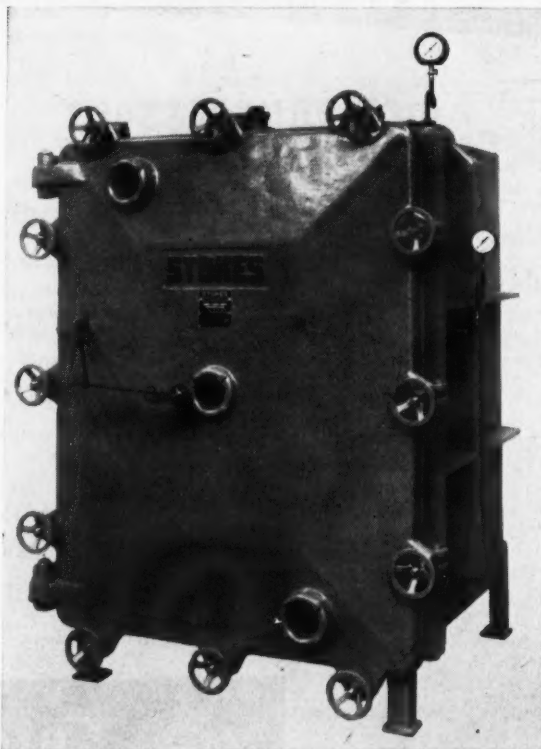
Source: Produced by Associated Valve and Engineering Co., Dept. CP, 1150 W. Marquette Rd., Chicago 21, Illinois . . . or for more information check CP 9797 on handy form, pages 2 and 3.

Shelf-drying under vacuum, at absolute pressures, in low micron range . . .

welded steel construction assures vacuum tightness in five chamber sizes

Uses: Vacuum shelf dryers for high-speed, low-cost drying at absolute pressures in low micron range.

Features: Rigid tests show vacuum tightness under extremely low, absolute-pressure drying procedures, manu-



Improved vacuum shelf dryer

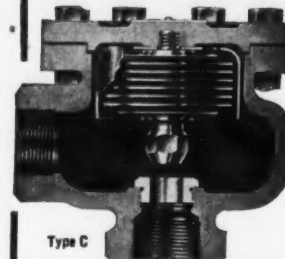
facturer reports. Uniform heat throughout entire shelf-area, due to arrangement of dryer shelves, which have internal baffles. Condensation of vapors passing toward vacuum connection is prevented by jacketed construction of top surface of shelf dryer. Lower section has drain gutter and outlet to permit cleaning unit without spillage.

Material may be closely observed during drying process by

We Invite You

TO TEST NICHOLSON STEAM TRAPS FOR

LOWEST STEAM LOSS LARGEST CAPACITY

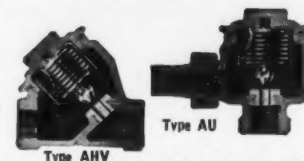


Type C

See why an increasing number of America's leading plants are standardizing on Nicholson traps.

Comparative tests by large trap users show: record low for steam waste; 2 to 6 times average drainage capacity;

operate on lowest temperature differential; no freeze-ups; greater simplicity (fewer spare parts). 5 types for every purpose; size 1/4" to 2"; pressures to 225 lbs. Test trap gladly sent. BULLETIN 1047.



Type AHV

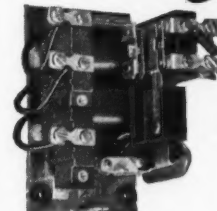
Type AU

W. H. NICHOLSON & CO. 181 OREGON STREET
WILKES-BARRE, PA.

Valves • Traps • Steam Specialties

When inquiring check CP 9798 on handy form, pgs. 2-3

B/W
all Electric **FLOATLESS**
LIQUID LEVEL
CONTROLS



The original — pioneered by B/W in 1933. No floats! No vacuum tubes! No moving parts in liquid. Literature describes relays and switches, automatic starter and relay combinations, multiple pump controls, special controls and panels and many application diagrams.

Controls not affected by pressures, temperatures, acids or caustics. Remote control if desired. Ice free electrodes where necessary.

WRITE FOR CATALOG

B/W CONTROLLER CORPORATION

2204 E. Maple Road, Birmingham, Mich.

FIRST IN THE FLOATLESS CONTROL FIELD

When inquiring check CP 9799 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

means of swivel spotlight attached to vacuum shelf dryer door. Spotlight is quickly, easily moved to any one of large diam., clear glass ports in door.

Easy sealing of chamber, due to convenient swinging eye-bolt clamps and handwheels; positive seal assured by specially shaped extruded baskets, fitted in machined grooves in dryer doors.

Description: Built of welded steel, in 5 chamber sizes, with shelf spacing to suit requirements. If desired, special metals are furnished, also metal-sprayed interiors. Steam, hot water or oil are used for varying drying temperature requirements.

Source: F. J. Stokes Machine Company, Dept. CP, 5974 Tabor Rd., Philadelphia 20, Pa. . . . or for more information check CP 9800 on handy form, pages 2 and 3.

Safely plug heating jacket direct to 110-v outlet, using dry flask . . .

small thermostat within jacket insulation protects both vessel and elements in 1200-hr test

Uses: Thermostat-protected heating jackets for preventing temperature build-up and thermal strain on any heated vessel.

Features: In tests, a jacket of this type maintained its top temperature level for 7 weeks, day and night—or approximately 1200 consecutive hrs—while plugged directly into a 110-volt wall socket and covering a dry flask, according to manufacturer. A dry flask was used in order to prevent air currents from cooling the elements.



Life of heating elements is said to be greatly prolonged, since they consistently operate at a safe level well below glow point. Unless temperature control below the maximum level is desired, no transformer is necessary to reduce voltage.

If flask boils dry, there is no danger of elements burning out, or consequent fire hazard. Flask may be left unattended at full voltage.

Description: A small thermostat is contained in the circuit, within insulation. This permanently seals against vapor or moisture, automatically opening circuit when jacket temperature reaches approximately 370°C.

Like other jackets in this line, heating elements are evenly distributed at inner surface, in close contact with vessel being heated. Non-glowing, they are double-braided with Fibreglas insulation. Exterior finish of jacket is soil and moisture-resistant aluminum vinyl resin, and each jacket is built around an interior reinforcing medium which maintains firm body and proper shape.

Full range of sizes fits Pyrex brand glass flasks up to 72 liters. Models to fit bottles, funnels, columns, Erlenmeyer flasks and other shapes are furnished.

Source: A development of Scientific Glass Apparatus Company, Inc., Dept. CP, Bloomfield, N. J. . . . or for more information check CP 9801 on handy form, pages 2 and 3.

ANNOUNCING...



WITH EASY-TO-CLEAN MAGNESIUM SIEVES Available Now For Prompt Delivery!

HERE'S a new machine with specific advantages for the chemical processing industry. It's the Low-Head all-metal gyratory sifter—made of steel and lightweight magnesium.

This compact all-metal sifter will efficiently handle numerous materials—ranging from pure chemical products (such as barium nitrate) to impure metallurgical products (such as zinc concentrate).

High-temperature materials can be sifted—since this machine has no wooden parts. And cleaning is

a simple matter—because the entire unit can be easily and safely washed.

The sifter is a high-speed, high-capacity unit holding four to seven sieves. It is patterned after the standard Allis-Chalmers gyratory sifter used by food and chemical processors all over the country. Sieve screens can be silk or metal—available in a variety of fine, medium and coarse meshes.

The Low-Head all-metal gyratory sifter is available now! Get full details from any A-C sales office or write direct, using handy coupon.

Low-Head is an Allis-Chalmers trademark.

ALLIS-CHALMERS

Chemical Milling and Processing Equipment



ALLIS-CHALMERS, 1151A SO. 70 ST. A 2619
MILWAUKEE, WIS.

☐ Please send handy packet with information on new All-Metal sifter and standard sifter bulletin 06B6124A.

☐ Would like personal visit from A-C representative with details of new sifter.

Name

Company

Street

City

State

When inquiring check CP 9802 on handy form, pgs. 2-3



Dryer processing spent grain from breweries and distilleries for stock feed.

Valuable By-Products From Reclaimed Waste Through FASTER HEAT

Industrial waste which once cost (and still does in many plants) hundreds of thousands of dollars a year for removal, now represents a new source of income with yearly profits in the millions.

DRYING EQUIPMENT ESSENTIAL

Most of the reclamation processes, such as reclaiming distillery refuse for cattle food, turning mill plant residues into vitamin products, citrus fruit peel into cattle feed and citrus molasses, etc., require steam drying apparatus. Operations can be speeded up, uniform control established and fuel saved by the use of the C-B System of Condensate Return.

C-B SYSTEM SPEEDS DRYING — SAVES FUEL

This removes accumulated condensate under suction before it can cool the dryers and returns it in a closed circuit under high pressure and temperature direct to boilers. Faster heat, more uniform heat, increased production and extraordinary fuel savings are the result.

Write for a copy of Publication 3250.

COCHRANE CORPORATION, 3162 N. 17th Street, Phila. 32, Pa.

COCHRANE CONDENSATE C-B BOOSTER SYSTEM

OF HIGH PRESSURE, HIGH TEMPERATURE CONDENSATE RETURN

When inquiring check CP 9803 on handy form, pgs. 2-3

"LIQUIDS WORTH STORING ARE WORTH MEASURING"

with a

LIQUIDOMETER

- FOR GAUGING LIQUIDS OF ALL KINDS
- 100% AUTOMATIC
- APPROVED BY UNDERWRITERS' LABORATORIES

Tank Gauge



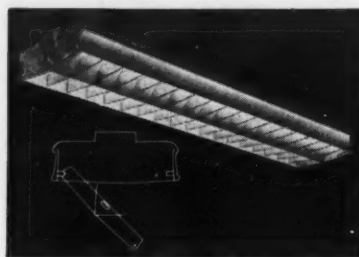
THE LIQUIDOMETER CORP.
38-18 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

When inquiring check CP 9804 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

Non-breakable aluminum panels shed radiant fluorescence of low brightness . . .

louvers of easy-to-open fixture can be hinged to either side or completely removed



Radiant fluorescent light with easy-to-open hinge give radiant glow of fine lighting quality.

Louvers may be hinged to either side, or completely removed for easy lamp and starter changes.

Description: Diffuse aluminum louvers provide comfortable shielding and pleasant low brightness at normal angle of view. Known as "Guthlite, Jr."

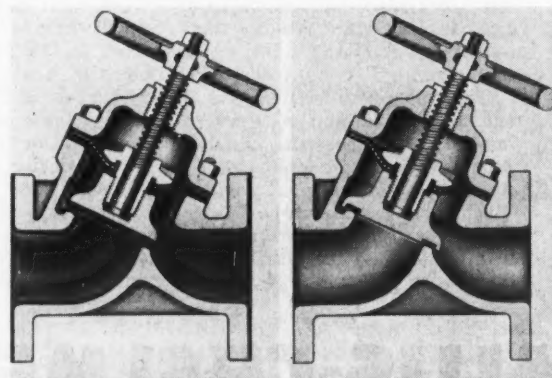
Source: The Edwin F. Guth Company, Dept. CP, St. Louis 3, Mo. . . or for more information check CP 9805 on handy form, pages 2 and 3.

Eliminate diaphragm crushing; valve shuts-off positively at all times . . .

diaphragm function limited to sealing bonnet only; separate member controls flow

Uses: For use with compressed air, compressed and liquified gases, hard-to-hold fluids, corrosive and noxious gases, for many types of corrosive process fluids, solvents, natural and corrosive waters such as mine water, sludges, slurries, fluids containing abrasive materials, also paper and pulp mill liquors, sewage and other such fluids.

Features: One of the "packless" type valves, it completely seals operating parts from the line fluid. Utilizes a design principle that limits the diaphragm function to sealing the bonnet only. A separate seating member, giving positive control of flow independently of the dia-



Valves in neoprene lined and unlined types have positive shut-off even in event of diaphragm failure

phragm, reduces the flexing to which the diaphragm is subjected and completely eliminates the diaphragm crush-



SARCO

SELF-CLEANING STRAINERS

Effective insurance against damage to delicate mechanisms from dirt or scale carried in pipe lines. They protect steam traps, reducing or regulating valves, nozzles, pumps, or burners. They prevent interruptions of production and costly repairs. Furnished in brass, cast iron, semi-steel or cast or stainless steel for all commercial pressures and with screens for steam, air, gas, water, oil, brine, ammonia, or other fluids.

Sarco steam strainers are easily cleaned by blowing through. They are also furnished with rotary scrapers, hand operated or driven by electric power. See Catalog No. 1200 and 1225.

SARCO SARCO COMPANY, INC.
Empire State Bldg., New York 1, N.Y.
SAVES STEAM SARCO CANADA, LTD., TORONTO 5, ONTARIO

When inquiring check CP 9806 on handy form, pgs. 2-3

LESLIE Reducing Valves for PLANT STANDARDIZATION

Standardization of regulating equipment for industrial plants has been a subject strongly emphasized by LESLIE for many years to reduce maintenance costs, and store's requirements for repair parts, to increase flexibility in operation and conversion.

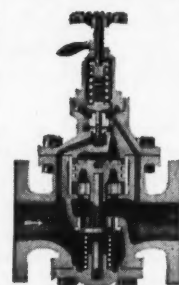
LESLIE offers these plant standardization values:

- ★ DEPENDABLE APPROVED PERFORMANCE
- ★ LOWEST OVERALL COST PER OPERATING YEAR
- ★ WIDE RANGE OF ADJUSTMENT
- ★ INTERCHANGEABILITY OF INTERNAL PARTS
- ★ RENEWABLE PARTS
- ★ RECOGNIZED QUALITY AND WORKMANSHIP
- ★ A COMPLETE LINE OF REGULATORS

SEND FOR your copy of Bulletin—"Reducing Valves, How to Select and Install"

LESLIE CO.

281 Grant Ave. Lyndhurst, New Jersey



Class L-3
LESLIE Pressure
Reducing Valve



PRESSURE REDUCING VALVES • • PRESSURE CONTROLLERS
PUMP GOVERNORS • • • TEMPERATURE REGULATORS
SELF CLEANING STRAINERS • • LESLIE-TYFON WHISTLES

When inquiring check CP 9807 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

ing action that may be encountered in designs where the diaphragm itself is used to effect valve closure. This lengthens diaphragm life. Shut-off of flow is positive at all times. Even in the event of diaphragm failure, fluid cannot pass on to the line when the valve is closed.

This valve is easier to operate than the diaphragm-closure type and closing is also quicker. The Y pattern body design gives greater flow capacity. Difficulties that necessitate frequent packing maintenance are eliminated.

Description: Two types of valves are available, one plain iron and the other neoprene-lined-and-coated. Both types have bolted bonnets. The plain iron valves are offered in sizes $\frac{1}{2}$ inch to 2 inches, inclusive, with screwed ends; and in sizes $\frac{1}{2}$ inch to 4 inches with flanged ends. The neoprene-lined-and-coated valves are being made with flanged ends only, in sizes $\frac{1}{2}$ through 4 inches.

In the unlined valves, a newly designed flat-face disc with neoprene insert has been used to assure tight seating under all conditions. The neoprene-lined-and-coated valves do not have such an insert. The entire disc surface is heavily faced with neoprene, which makes a seal with the neoprene-covered seat when the valve is closed.

These valves have rising stem construction, sizes 2 inches and under having the stem rising through the handwheel and the larger sizes having the handwheel rigidly attached to the stem and rising with it.

Where abrasives are present, a cap to protect stem threads can be supplied for valves of 2 inch and smaller sizes.

Source: Crane Co., Dept. CP, 836 So. Michigan Ave., Chicago 5, Ill. . . . or for more information check CP 9808 on handy form, pages 2 and 3.

Lights when current shuts off; goes out when current is restored . . .

fluorescent unit supplies 10 hrs emergency light with dry cells; plugs into 115-v AC outlets

Uses: Provides instant, automatic light when regular source of current is interrupted. Also can be used as a hand light.



Fluorescent emergency light

Features: Goes off automatically when current is restored. Provides approximately 10 hrs emergency service with standard dry cell batteries. Illumination is soft and glareless. No special wiring is necessary.

Description: Uses standard Mazda fluorescent lamp, plugging into any 115-volt AC outlet. Convenient carrying handle. Weight, 9- $\frac{1}{2}$ lbs. Length, 9- $\frac{1}{2}$ ". Height, 6". Depth, 4- $\frac{1}{2}$ ".

Source: Chatham Products Company, Dept. CP, 15 E. Runyon St., Newark 5, N. J. . . . or for more information check CP 9809 on handy form, pages 2 and 3.



When It's
Grinding or Pulverizing

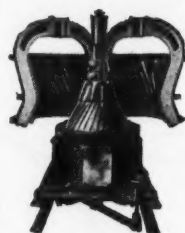
STURTEVANT
EQUIPMENT

*DOES THE
JOB FAST!*

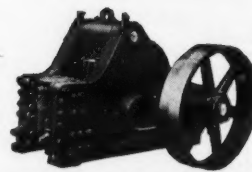
Whether you grind soft or hard materials, there is a Sturtevant Grinder or crusher exactly suited to your requirements.

Tough and rugged, Sturtevant Equipment has the built-in stamina to stand up under continuous operation. Most of this equipment has the "open door" accessibility which makes cleaning easy.

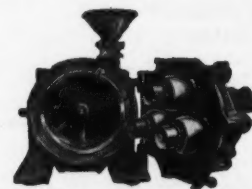
Look into Sturtevant Grinders and crushers for your applications. These machines will give you the exact mesh you want . . . cut your costs by increasing production. Write for catalog today.



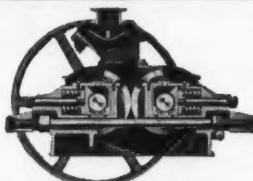
ROTARY FINE CRUSHERS for intermediate and fine reduction (down to $\frac{1}{4}$ "). Open door accessibility. Soft or moderately hard materials. Efficient granulators. Excellent preliminary Crushers preceding Pulverizers.



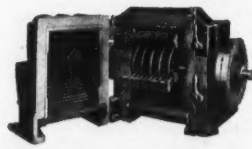
JAW CRUSHERS for coarse, intermediate and fine reduction of hard or soft substances. Heavy or light duty. Cam and Roller action. Special crushers for Ferro-alloys. Several types, many sizes.



RING-ROLL MILLS for medium and fine reduction (10 to 200 mesh), hard or soft materials. Very durable, small power. Operated in closed circuit with Screen or Air Separator. Open door accessibility. Many sizes. No scrapers, plows, pushers, or shields.



CRUSHING ROLLS for granulation, coarse or fine, hard or soft materials. Automatic adjustments. Crushing shocks balanced. For dry or wet reduction. Sizes 8 x 5 to 36 x 20. The standard for abrasives.



SWING-SLEDGE MILLS for coarse and medium reduction (down to 20 mesh). Open door accessibility. Soft, moderately hard, tough or fibrous substances. Built in several types and many sizes.



MOTO-VIBRO SCREENS screen anything screenable. Classified vibrations. Unit construction—any capacity. Open door accessibility. Open and closed models with or without feeders. Many types and sizes—range of work $\frac{1}{4}$ " to 60 mesh.

STURTEVANT MILL COMPANY

119 CLAYTON STREET, BOSTON 22, MASS.

DESIGNERS & MANUFACTURERS OF DENS AND EXCAVATORS • MIXERS • SCREENS • PULVERIZERS • ELEVATORS • AND COMPLETE FERTILIZER UNITS

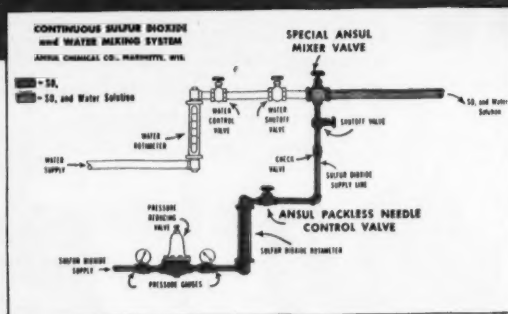
When inquiring check CP 9810 on handy form, pgs. 2-3

BETTER QUALITY CONTROL
IMPROVED PROCESS EFFICIENCY
IN *one* OPERATION

✓ ACIDIFY . . . or ✓ NEUTRALIZE
✓ BLEACH . . . ✓ PRESERVE
✓ DECHLORINATE . . . ✓ REDUCE
✓ DEOXIDIZE . . .

WITH AN **ANSUL**
CONSTANT SO₂ CONCENTRATION
SYSTEM

Finger-tip controlled
•
Easy and inexpensive
to install
•
Safer to handle and
operate
•



ANSUL SO₂ is a volatile, easy to control, *multi-purpose* acid. It permits the user to . . . 1) combine a number of individual process steps into one simple operation . . . 2) easily remove many product impurities sometimes difficult to eliminate . . . resulting in *improved process efficiency* and *better quality control* of the finished product.



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Write for more information and if possible, include a description of the application in your plant. Our Technical Staff will help you take full advantage of the benefits outlined above. In addition to our Bulletin describing the Ansul Constant SO₂ Concentration System, we will send you an informative treatise describing the properties, characteristics and industrial uses of Liquid Sulfur Dioxide. . . . An Ansul Technical Staff Publication.

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60 E. 42nd St., New York—535 Chestnut St., Philadelphia

When inquiring check CP 9811 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

Movement of swivel caster unaffected by overload . . .

ball-race sections always maintain proper alignment even though no king-pin is employed

Uses: Swivel casters for use on various types of rolling equipment.

Features: In this construction, the curved top of the fork is locked between top and retaining plates so that ball-race sections maintain alignment, even under excessive overloads. King-pin is not used. Proper alignment assures easy swiveling. Series of arches built into legs provides maximum dispersion of loads over entire ball race.

Description: Series "21" swivel casters are made of pressed steel. Wheels are available in several types: semi-steel with plain or roller bearings; solid rubber with oil-less bearings; vulcanized rubber with roller bearings; and plastic with plain or roller bearings.

Source: Manufactured by Dept. 26, The Fairbanks Company, Dept. CP, 393 Lafayette St., New York 3, N. Y. . . . or for more information check CP 9812 on handy form, pages 2 and 3.

Entirely submersible sump pump weighs only 45 pounds . . .

diaphragm switch has no moving parts exposed to water, does not require a float

Uses: For all types of sump installations, particularly where compact size, total submergibility and low weight are important considerations. Can be used where requirements call for handling up to 3300 gph at 10 feet and will pump water to a height of 25 feet.

Features: Height is only 9½ inches and diameter 11 inches. Unit may be easily and conveniently installed, as no permanent mounting is required. It is quickly positioned for use wherever current is available.

The ball bearing motor is hermetically sealed and the bearings are conveniently lubricated by running submerged in oil. This eliminates grease cups, external oiling and periodic servicing.



Pumps sumps dry — eliminates
stagnant water

The diaphragm switch has no moving parts exposed to water and it does not require a float, which is said to be an exclusive feature.

Description: All exposed parts are of durable bronze construction, yet because of its low height, the pump weighs only 45 pounds. The pump is located directly on the motor shaft to eliminate extra bearings, shafts and couplings.

The discharge connection is vertical for installation convenience, eliminating the need for extra elbows, or street ells. Unit is not affected by power failure. It goes into

Everyone
has problems



"Eni, Meni, Mini, Moe . . ."

VICTOR CHEMICAL WORKS

If yours happens to be
flameproofing . . . Investigate

VICTOR DIAMMONIUM PHOSPHATE

Today, phosphate of ammonia is generally recognized as the most effective flameproofing agent. Victor diammonium phosphate is used extensively and with great success in the flameproofing of textiles, paper, and wood. Such properties as effectiveness in preventing after-glow, and versatility of application are responsible for its increasing popularity. For complete information, write today or fill in and return the coupon.

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COUPON
TODAY!

Victor Chemical Works
141 West Jackson Blvd., Chicago 4, Ill.

Gentlemen:
Send additional information on Victor diammonium
phosphate for flameproofing to:

Name _____

Company _____

Street _____

City _____ Zone _____ State _____

V5

When inquiring check CP 9813
on handy form, pgs. 2-3

For protection against Air Damage —

USE

**MAGNOLIA
AIRCO
NITROGEN**
for
oxygen-free
atmospheres

For deaerating, processing, storing and packaging fats and oils, in the packaging of dehydrated foods, and other processes requiring an inert atmosphere, use Magnolia Airco Nitrogen. It gives positive protection to practically any material susceptible to oxidation and corrosion.

Magnolia Airco is one of the leading producers, purifiers and suppliers of nitrogen in the southwest.

To meet your requirements Magnolia Airco can supply nitrogen in 224 cu. ft. cylinders, or, if your plant is conveniently located and is equipped with an internal pipeline, delivery in bulk may be made in trailers. For further information address our nearest office.



MAGNOLIA AIRCO GAS PRODUCTS CO.

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Southwestern Headquarters for Oxygen, Acetylene and other Gases... Carbide... Gas Cutting Machines... Gas Welding Apparatus and Supplies... Arc Welders, Electrodes and Accessories

When inquiring check CP 9814
on handy form, pgs. 2-3

APRIL, 1949

PROCESSING EQUIPMENT

operation as soon as power is restored, while conventional sump pumps are flooded out, causing motor failure. Overloading does not cause motor failure since perfect heat dissipation is provided.

The turn-on point, or height of water which is required to start the pump is easily adjustable from a few inches to several feet without the use of special tools. Pressure of rising water actuates the switch which is located in the discharge line, and subsequent pumping action keeps it in operation. The switch automatically shuts off when the pump draws air.

The rugged cast bronze screen is located for easy accessibility, while the large screen area minimizes cleaning. The pump is powered by a 1/3 hp, 115 volt, AC motor.

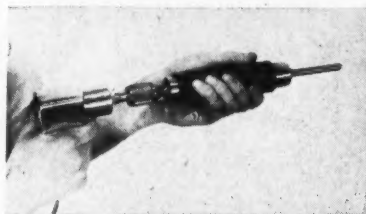
Source: P-109 sump pump is built by Kenco, Inc., Dept. CP, Elyria, Ohio . . . or for more information check CP 9815 on handy form, pages 2 and 3.

Convert portable electric drill to power hammer with aid of adapter . . .

makes drill serviceable for any application where moderately heavy hammering is needed

Uses: As an adapter for converting the rotary motion of a portable electric drill into hammering action for drilling holes in tile, brick, etc. Also, for use where rapid, moderately heavy hammering may be required.

Features: Weighs less than 3 pounds. No outside moving parts. Completely safe. The combination of



Portable drill-hammer

percussion and rotation is very desirable in drilling in tile or brick, both to get a round dimensioned hole and to prevent the drillbit from "freezing" in the hole.

Description:

The "Hamer-Dril" is an adapter, which when chucked in any 1/4 inch electric drill is converted into a compact power hammer. It is suitable for service wherever moderately heavy hammering is required. It may also be operated in drill-press or by flexible shaft, and strikes "blow-per-revolution" of the driver.

Its size, 6 1/2 inch by 1 1/8 inch, and weight of less than three pounds makes it very handy in close quarters.

The tool socket is a 9/16 inch hex. opening which makes adapting tools for special purposes very simple. By means of the flats of this hex, rotary motion under power is conveyed to the drill bits while hammer blows are being delivered.

Because of the wide use of Rawlplugs in making certain attachments for fixtures, two toolholders to fit the taper shanks of Rawldrills are furnished as standard equipment. These toolholders fit 10 sizes of drillbits from No. 6 woodscrew size to 3/8 inch. Some users fit tool bits up to one inch diameter and drill holes in stone.

Tool blanks are available from which special requirements may be ground and forged.

Source: Dril-Hamer, Dept. CP, Box 158 Planetarium Station, New York 24, N. Y. . . . or for more information check CP 9816 on handy form, pages 2 and 3.

Newark METALLIC FILTER CLOTH Combines Accuracy with Durability

For many years, processing engineers who demand the best in Metallic Filter Cloth have specified NEWARK. This cloth offers a combination of accuracy and durability — a superior cloth with a long service life.

Newark Metallic Filter Cloth is available in a wide variety of metals and in plain, twill, dutch, double dutch, twilled dutch and other weaves. Our wide experience in the processing field is your assurance of the right cloth for your filtration problem.

Samples are available.

NEWARK
for ACCURACY

Newark Wire Cloth COMPANY

336 VERONA AVENUE

NEWARK 4, NEW JERSEY

When inquiring check CP 9817 on handy form, pgs. 2-3



Awarded by The Franklin Institute for Discovery, Invention, or Development in Physical Science

RESEARCH REPORT

NUMBER TWO

ON THE PROGRESS OF MAKING DRY SEPARATIONS
BY SPECIFIC GRAVITY THROUGH AIR-FLOTATION

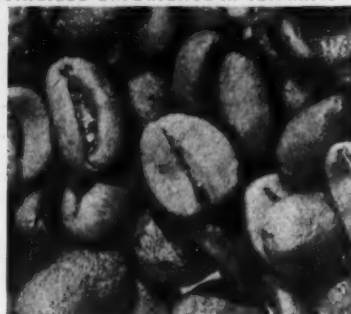
COMPILED FROM SIXTY-ONE YEARS OF SPECIALIZED EXPERIENCE IN SEPARATIONS

Problem: Grading Coffee Beans

Solution: S S & S Process

The following unretouched photographs illustrate graphically the efficiency with which a Model BX-100 Specific Gravity Separator was used to effect a general grading by differences in the apparent bulk density of the various components.

While this particular application of Sutton, Steele, and Steele separating equipment is standard plant procedure among coffee wholesalers and processors, it serves to emphasize how hundreds of other types of dry agricultural and industrial products can be salvaged from contaminations and unuseable materials, and up-graded to premium quality products.



PRODUCT No. 1, the heaviest material (lbs. per cubic foot), consisted of top-grade coffee beans and represented 22.2% of the total volume. Note the consistency in general appearance of each individual bean.



PRODUCT No. 3*, consisting of lower grade beans of medium weight, is an arbitrary gradation made to control the quality of Product No. 1. After Product No. 1 has been salvaged, Products No. 2, No. 3, and No. 4 can then be re-graded in the identical manner.

*Products No. 2 and No. 4, also of middle grades, have not been shown due to space restriction.



PRODUCT No. 5, containing hulls and broken beans, was removed at the lower, or "lighter," end of the deck and represented 7.5% of the total volume. Check YOUR separating problem today. Chances are, the S S & S Process is your answer, too.

LITERATURE AVAILABLE

Tell us about your separating problem and we will forward bulletins which describe in detail how the famous S S & S Process can be applied successfully to your particular needs. Address inquiries to:

DEPARTMENT B
SUTTON, STEELE
& STEELE, INC.
1031 SOUTH HASKELL AVENUE
DALLAS, TEXAS, U. S. A.

Dallas, Chicago, Des Moines, Minneapolis, New York City, Pittsburgh, San Francisco, Columbus, Ga., Jackson, Mich.
Foreign: Winnipeg, Canada; San Paulo, Brazil; London, England.

SUTTON,

STEELE &

STEELE, INC.

When inquiring check CP 9818 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

Element design and method of installation improve furnace performance . . .

result in rapid heating, uniformity of chamber temperatures and economy of operation

Uses: For applications utilizing temperatures up to 1850 degrees F.

Features: Elements are of type in which resistors are embedded in ceramic slabs. In the side walls they are so placed that an air space is left behind, above and below the slab which then forms a baffle wall creating a natural convection when heated.

This arrangement not only equalizes temperatures but causes cool operation of the element and furnace wall, the effect being to develop unusually rapid heating, uniformity of chamber temperatures and economy of operation.



Door completely covers operating end of furnace

The quick removal of heat from both sides of the element greatly lengthens element life.

Description: Furnaces are offered in Models BL-1, 2 and 3. Chamber dimensions of 12" width, 8" height are common to all models. Respective lengths are 18", 24" and 36" with power inputs of 11.5, 14 and 18 KW. These industrial box furnaces are offered for either single phase or three phase 230 volt operations.

The door used in these furnaces completely covers the operating end. It insulates the front section equally with the other furnace walls. This type of door eliminates the need for heavy fire brick in the vestibule and in the door, and as a consequence the usual heavy front end heat losses are largely eliminated.

The vertically operated door mechanism consists of a counterweighted yoke which pivots on antifriction bearings.

Full automatic control is furnished either mounted in a completely wired control panel including multi-breaker line switch and fuses, or arranged so that the control and switch equipment can be mounted on a wall separate from the unit.

Source: Cooley Electric Mfg. Corp., Dept. CP, 38 So. Shelby St., Indianapolis, Ind. . . or for more information check CP 9819 on handy form, pages 2 and 3.

WHAT MISSISSIPPI HAS TO OFFER THE CHEMICAL INDUSTRY

- Abundance of basic chemical raw materials: over 1400 producing oil wells, over 30 known salt domes, large limestone deposits, almost unlimited sources of cellulose and many other vital natural products.
- Access to the world's greatest reservoir of cheap and plentiful Natural Gas.
- A year-round supply of pure surface and artesian water.
- Fair stream pollution laws.
- Excellent rail, highway, air and water transportation facilities with both river and gulf ports open all 12 months.
- Tailor-made, community-financed factory buildings under the state's BAWI (Balance Agriculture with Industry) Plan. A BAWI plant for your industry not only means a considerable capital savings for you but also assures the interest and cooperation of the community in making your business a successful enterprise.
- An untapped reservoir of intelligent rural labor in Mississippi's friendly communities.

For Specific Information Concerning
Your Requirements
Write:

MISSISSIPPI AGRICULTURAL
& INDUSTRIAL BOARD

New Capitol Building — Jackson, Miss.

When inquiring check CP 9820
on handy form, pgs. 2-3

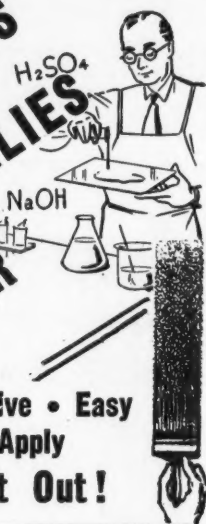
CHEMICAL PROCESSING Preview

Nukemite

PROTECTIVE COATING

for
WALLS
FLOORS
EQUIPMENT

Resists
ACIDS
Resists
ALKALIES
Resists
WEAR



Inexpensive • Easy
to Apply
Try it Out!

Write for Nukem Work Sheet
and our recommendations to
solve your problem.

Name.....
Company.....
Address.....
City.....



NUKEM
PRODUCTS CORPORATION

99 Colgate Avenue
BUFFALO 20, N. Y.

When inquiring check CP 9821
on handy form, pgs. 2-3

PROCESSING EQUIPMENT

**Rapidly mixes large quantities
of heavy pastes in 60 to
80% less time . . .**

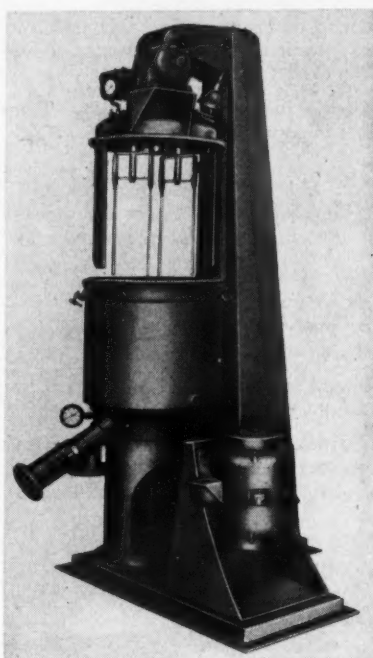
intended primarily for vacuum operation, stainless
steel mixer also useful at normal pressures

Uses: For rapidly mixing large quantities of heavy
pastes, similar materials which usually require a long
period of slow mixing. Intended primarily for vacuum
operation, but also used to advantage at normal pressures.

For disintegrating and dispersing such materials to fine,
homogenous state.

Features: Blades handle large amounts of material
rapidly with maximum power economy. Extensive tests are
said to indicate a saving of 60 to 80% mixing
time, as compared to conventional
methods. Compact, stable, and
free from excess
noise or jarring
during operation.

Description:
Unit employs two
sets of oppositely-
rotating, rein-
forced blades of
a special scraper
and agitator mech-
anism, mounted
in cover, to break
up the heavy or
viscous and rap-
idly congealing
mass thrown out
by mixing disc,
at the same time
preventing it
from adhering to
cylinder wall.



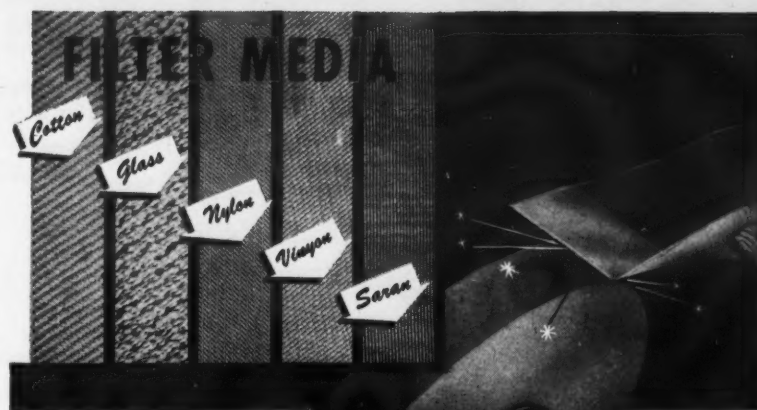
Heavy paste mixer

Drip-proof motor with separate gear reducer operates
scraper and agitator mechanism at 23 rpm. At the bottom,
a motor with V-belt drive operates the stainless steel mix-
ing disc at 600 rpm. This disc employs centrifugal force
developed through high-speed horizontal rotation of its
curved radial ribs. Spiral circulating action set up both
within and outside of inner cylinder wall results in repeated
mixing and dispersion of high intensity.

Polished stainless steel mixing container is furnished with
solid stainless steel plug valve which fits snugly into cone-
shaped bottom. A dome cover is included for operation
under vacuum or pressure. This is raised or lowered on
steel guide rails. Mixing tank is jacketed for higher tem-
perature use and for pressures up to 100 psi. Indicator
dial thermometer in cone part of shell, near bottom, records
temperatures.

A vacuum gauge and 100 psi safety relief valve accurately
regulate and control pressure. Mixer is furnished with
manual AC starter with thermal overload protection, and is
10' high overall.

Source: A development of Abbe Engineering Co.,
Dept. CP, 50 Church St., New York 7, N. Y. . . or for
more information check CP 9822 on handy form, pages 2
and 3.



NO AX TO GRIND HERE!

We Manufacture All Types of
FILTER CLOTH

NYLON
COTTON
GLASS

RUBBER COVERED SCREENS

VINYON*
SARAN
VINYON N*

*TMC & CCO

The latest addition to our broad line of filter cloth is made
from ORLON†, an acrylic fiber; it is recommended for hot
filtration.

As manufacturers of an extensive line of Filter Cloth our anal-
ysis of and recommendations for your filter media problems
would be unbiased . . . we "grind no ax" for any particular
cloth.

Each of the cloths listed offers different operating advantages.
Each type has its own range of chemical resistance, its own
temperature limits and its own degree of resistance to mois-
ture, molds, fungi and bacteria. We would be able to recom-
mend a filter cloth that will give you the best service in your
particular filtration operation.

Literature and test samples are available on request.

†T.M. E. I. du Pont de Nemours & Company, Inc.



Weavers of Industrial Filter Media for over Forty Years

National Filter Media Co.

General Offices & Mills: New Haven 14, Conn.
Western Office & Factory: Salt Lake City 1, Utah

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Johannesburg, South Africa
Edward L. Bateman

When inquiring check CP 9823 on handy form, pgs. 2-3



Plugged Tubes
mean nothing to this
new drill!

airetool's
new CB drill
for heat exchanger
and condenser tubes
3/8" to 2 1/2" I.D.

This drill head — one of many Airetool designs — features a carbide metal tip that cleans the hardest scale even when tubes are completely plugged. Try it with Airetool's direct-drive or geared cleaners and you'll have a perfect cleaning job faster and at less cost.

don't retube — clean it!



The illustrations to the left show a 3/8" tube before and after cleaning. See how thoroughly the plugged tube was cleaned — making re-tubing unnecessary.

For further information write,
The Airetool Mfg. Co., 331 S. Center Street
Springfield, Ohio

THERE'S AN AIRETOOL TUBE CLEANER AND EXPANDER FOR
EVERY TYPE OF TUBULAR CONSTRUCTION.



When inquiring check CP 9824 on handy form, pgs. 2-3

Page 96

PROCESSING EQUIPMENT

First aid kit for eye care contains fifteen items . . .

eye-sweep uses G. E. magnet; magnifier is made of unbreakable plastic

Uses: Designed to provide the best possible first aid equipment for the use of the first aider who is instructed what first aid he can give in eye injury cases as well as what he should not do.

Features: The kit includes a non-breakable magnifier which locates particles and then mechanically removes the foreign object with a specially smoothened eye-loop.

Description: The kit contains 15 eye health items such as eye patch, eye pads, adhesive strips, eye droppers, eye cup, cottonballs, cotton swabs, eye drops, castor oil, boric acid solutions, boric acid ointment, and a "Magna-Clean" eye particle remover, (plastic magnifier mentioned above). The magnet used is the G. E. Cunife magnet.

All these items are packed in a sturdy plastic box. Transparent and air-tight. Measurements of kit are: 8 1/4" x 4 1/4" x 1 1/4".

Source: Ohio First Aid & Pharmacal Co., Dept. CP, 1285 West 6th St., Cleveland, Ohio. . . or for more information check CP 9825 on handy form, pages 2 and 3.

Leaves both hands free while testing motors for pull-in, full-load, idle, etc . . .

hydraulic dynamometers of various capacities permit locked tests without stopping motor to insert pin

Uses: Hydraulic dynamometers for use wherever accurate load-testing of motors is an important operation. Possible tests include idle, pull-in, pull-up, full-load and locked.



Foot-controlled hydraulic dynamometer

Features: Locked test can be made without need for shutting off motor to insert locking pin or similar device. Foot-controlled, leaving both hands free. Gauge, furnished

DAVIS "PACKLESS" FLOAT BOXES and CONTROL VALVES

- 1. LEAKPROOF.** Thanks to the exclusive Davis "Dia-Ball" packless transmission unit. The safe way to handle volatile liquids.
- 2. SMOOTH OPERATING.** Sealed, flexible joint, No packing nuts to tighten. No packing to replace. Minimum friction; increased sensitivity.
- 3. SIZES.** Control valves from 1/2" to 8". Float boxes with 6", 8" or 10" floats. "Packless" construction for pressures to 250 p.s.i.; temperatures to 300° F.



(LEFT) Davis No. 161D "Packless" Float Box with No. 668 "Packless" Control Valve.

Write for Bulletin.

DAVIS REGULATOR COMPANY
2562 S. Washtenaw Ave., Chicago 8, Ill.



**DAVIS REGULATOR
COMPANY**

When inquiring check CP 9826 on handy form, pgs. 2-3

accuracy at High Operating Speed with Despatch LABORATORY OVENS



Despatch Laboratory and Production Ovens are ideally suited to all types of research . . . testing . . . production control. They are designed to provide the closest heat uniformity through every inch of the work chamber . . . consistently accurate temperature control at all heats . . . ample speed to process capacity loads at any desired operating temperature.

Chemical and analytical, drying and baking, preheating and aging, sterilizing and curing, food dehydrating — these are just a few of the uses. Available in six models, with inside dimensions ranging from 13"x13"x13" to 37"x25"x50".

- Positive Air Intake
- Guaranteed Heat Elements 2700 to 12,000 watts
- High Volume Fan
- Air Velocity Control
- Accurate Indicating Control
- Modern Design — Rounded Corners

MANUFACTURERS OF OVENS FOR ALL PURPOSES



ASK FOR BULLETIN
No. 106

343 DESPATCH BLDG., MINNEAPOLIS 14, MINN.

When inquiring check CP 9827 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

PROCESSING EQUIPMENT

with unit, permits direct reading of exact foot-pounds of torque.

Description: Assembly No. SA-483 is 30 foot-pounds capacity, with adapters for $\frac{1}{2}$, $\frac{3}{8}$, $\frac{3}{4}$ and 1" motor shafts. Dynamometer comes fully assembled on steel bench top about 36" square. This can be mounted on standard steel bench legs or on existing benches in test or assembly lines. Foot-control cylinder can be placed in most convenient location.

Other dynamometers as follows: SA-484, 30 to 300 foot-pounds capacity, with adapters for $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, $1\frac{1}{2}$, $2\frac{1}{2}$, $3\frac{1}{2}$ and $27\frac{1}{2}$ " motor shafts; and SA-485, which is a combination of the 30 and the 30 to 300 foot-pound machines. Units are built to order, available within 60 days.

Source: Produced by Wagner Electric Corporation, Dept. CP, 6488 Plymouth Ave., St. Louis 14, Mo. . . or for more information check CP 9828 on handy form, pages 2 and 3.

Each unit of communicating system provides optional performance . . .

expansion, rearrangement possible without discarding original installation

Uses: Provides direct two-way speaking contact with all departments of plant. Communication may be with one person at a time in privacy or with ten, twenty or more persons at once.

Features: "Dynasonic" feature makes it possible to use the same unit for every type of application, whether it be for "all-Master-Stations", or a "Master" and staff stations or as a number of Master stations intermixed with staff stations. The user selects, upon installation, the type of performance he desires in each unit, and he may change the selection at any time, in any way his experience may indicate may be desirable.

Description: Cabinets are streamlined, sturdy Bakelite, rich walnut in color. Push-button Master stations are available in six, twelve, twenty and thirty station capacity. Staff stations are not connected with electrical outlet. They converse with Master station only.

The Master units operate on 110-120 volts alternating current, 60, 50, 40 and 25 cycles, 110 volts direct current.

All Master units feature the multi-matic selector which requires only twelve push buttons to provide twelve, twenty and thirty station capacity. Six station "Masters" have six pushbuttons.

A Hold-a-matic Conference Control allows conference between three or four groups of stations merely by selecting desired buttons.

Powerful, rugged amplifier provides brilliant voice range power. Stations may be up to 3000 feet apart. Persons at "non-private" staff stations can answer from a distance of up to 50 feet from the unit.

Source: Chief Forty Niner intercommunicating system is built by Talk-a-phone Co., Dept. CP, 1512-V South Pulaski Rd., Chicago 23, Ill. . . or for more information check CP 9829 on handy form, pages 2 and 3.

APRIL, 1949

Any mesh, any weave in the Screen and Filter Cloth you need!

HAVE you ever replaced fabric or metal cloth, and thought, "Why can't I get cloth with better life?"

The answer is, you *can*. 33 quality weavers produce wire cloth of Monel*, Nickel and Inconel* in all meshes and weaves. Called "task metals," these metals are ready for your toughest jobs.

Wire cloth of Monel, Nickel or Inconel is rustless . . . corrosion-resisting . . . strong . . . tough. It stands abrasive wear. It endures extremes of temperature. It guards product purity.

It is probably just the kind you want . . . and *need*. Prove its superiority by running a comparative-life test right in your own plant.

The cost is another reason for trying it. The easy workability of these metals enables weavers to produce cloth of Monel, Nickel or Inconel at prices comparable to what you are now paying for less durable metals. *Fine weaves of Monel often cost less!*

Seams are readily brazed, soldered or welded; retain full corrosion resistance. For booklet, "ESTABLISHED WEAVERS," write to our Frank Bailey

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

*Reg. U. S. Pat. Off.

EMBLEM OF SERVICE



Monel* Nickel Inconel*

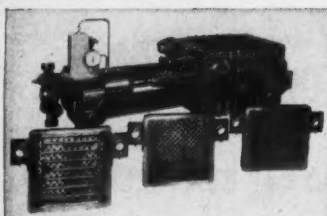
"Task Metals" for Industry

When inquiring check CP 9830 on handy form, pgs. 2-3

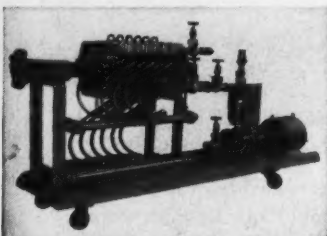


**EVEN FOR
THOSE SMALL
FILTRATION JOBS**

SHRIVER FILTER PRESSES



Stainless steel press for filtration at 250 p. s. i. has reinforced special plates and screens and Hydro-Kloser device.



Portable unit for high temperature filtration; has hollow filter plates for steam circulation.

Provide these Advantages

- 1—Ability to filter any material, no matter what its characteristics, at any required pressure or temperature.
- 2—Ability to recover solids as dry as possible or clarify crystal clear.
- 3—Ability to use any filter medium, filter aid or precoat.
- 4—Ability to wash or extract filter cake; and even redissolve cake without removal from press.
- 5—Ability to provide any capacity in any number of chambers.

The Shriver Filter Press in stationary or portable types complete with pump and piping is just about the most versatile processing unit for your laboratory or plant. Do you want a copy of catalog 49?

T. SHRIVER & COMPANY, Inc.

846 Hamilton St.

Harrison, N. J.

When inquiring check CP 9831 on handy form, pgs. 2-3

Hapman Tubular CABLE-VEYOR

for the
FOOD and CHEMICAL INDUSTRY
• handles any flowable material •

**SANITARY • SELF-CLEANING
POSITIVE MATERIAL MOVEMENT
HIGH SPEED and CAPACITY**



HAPMAN CONVEYORS, Inc. 2405 West McNichols
Detroit 21, Michigan

Your request for a copy of our new catalog insert, describing the Hapman Cable-Veyor in detail, will bring it by return mail.

When inquiring check CP 9832 on handy form, pgs. 2-3

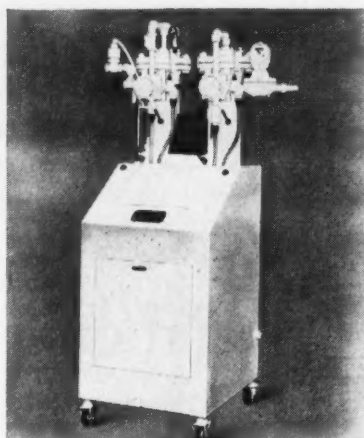
PROCESSING EQUIPMENT

**Demineralize lab water
at rate of 60 gph . . .**

self-contained unit has rubber-lined tanks, Saran piping

Uses: For producing laboratory supply of water equal to distilled in total solids at rates of up to 60 gallons per hour and an exchange capacity of 14,000 grains as CaCO_3 .

Features: Unit is completely self-contained, having the regenerant containers concealed in the cabinet. Tanks are rubber-lined and piped with Saran piping and tubing; operating valves are Everdur.



Mobile demineralizer unit

Description: The entire unit is of steel construction and is ball bearing caster equipped. It is completely assembled and loaded ready to be connected to the raw water line. Electronic controls assure automatic shut-off when a predetermined degree of impurity in the demineralized water is reached.

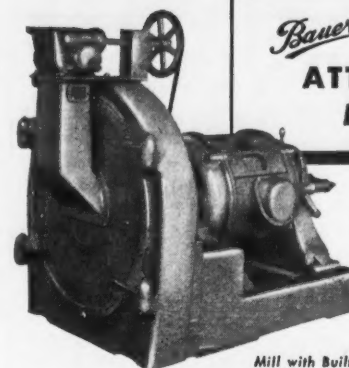
Source: Model 200 demineralizer is built by Belco Industrial Equipment Div. Inc., Dept. CP, 102 Iowa Avenue, Paterson, N. J. . . . or for more information check CP 9833 on handy form, pages 2 and 3.

**Collect grinder dust with
portable, medium-
size units . . .**

installed without cutting wall or floor near dust-source

Uses: A portable self-contained unit that collects dust, dirt and lint from medium duty, medium size grinding, buffing, polishing operations, and shavings from middle sized belt and disc sanders.

Features: Compactness (20" x 30" floor space and 30" height) permits the unit to be installed immediately



Bauer SINGLE-DISK ATTRITION MILLS

- FOR**
- GRINDING
 - GRANULATING
 - CRACKING
 - SHREDDING

Mill with Built-in Motor and Standard Spike Roll Feeder

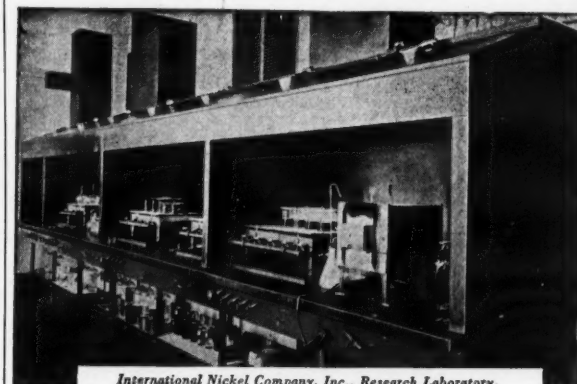
These mills are designed for reducing many commercial materials used in the process industries. Plate clearance is readily adjusted for the degree of fineness desired. Relief springs permit plates to spread apart for preventing damage if infrangible foreign matter enters the mill. Many designs of plates available to meet specific requirements.

The four sizes of the No. 245 series Bauer Single-Disk Attrition Mills have 18", 24", 30", and 36" diameter plates respectively. Built-in motor drives, V-belt, or chain drives or belt pulleys are available. The mills may be equipped with large feeder spouts, spiked roll feeders, screw feeders, or crusher feeders.

You are invited to ask for literature and quotations on these mills. Better still, send materials for experimental grinding on commercial size machines in the Bauer Laboratory.

THE BAUER BROS. CO., Springfield 99, Ohio

When inquiring check CP 9834 on handy form, pgs. 2-3



International Nickel Company, Inc., Research Laboratory, Bayonne, New Jersey

**ALBERENE FUME HOODS
make Perchloric Acid handling safer!**

Want to take the worry out of using perchloric acid in your laboratory analyses? Now Alberene Stone Corporation offers you fume hoods *especially designed* to reduce hazards in working with perchloric acid . . . *especially designed* to give you greater safety. And for prompt advice on any of your laboratory fume problems write to Alberene Stone Corporation of Virginia, 419 Fourth Avenue, New York 16, N. Y. Or better yet — visit your nearest Alberene branch office.

ALBERENE STONE

When inquiring check CP 9835 on handy form, pgs. 2-3

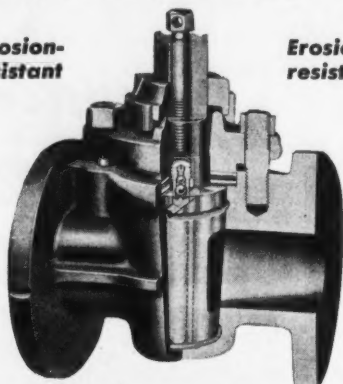
CHEMICAL PROCESSING Preview

Nordstrom

LUBRICATED VALVES

Corrosion-resistant

Erosion-resistant



LUBRICATED FOR TROUBLE-FREE SERVICE

Lubricant under pressure performs triple function — lubricates plug, forms seal around each port and jacks plug. Streamlined interior. Will not clog. Seat is unexposed to line contents. Available in semi-steel, Nordco steel, stainless steel, bronze and special alloys. Keep upkeep down. Use genuine Nordco seal lubricants. Request descriptive literature.

NORDSTROM VALVE DIVISION—ROCKWELL MANUFACTURING CO.

400 N. Lexington Ave.
Pittsburgh 8, Pa.
Export Representatives:
Rockwell International Corp.
Empire State Bldg., New York



Atlanta, Boston, Chicago
Houston, Kansas City, Los Angeles,
New York, Pittsburgh, San Francisco,
Seattle, Tulsa.
—and leading Supply Houses

When inquiring check CP 9836 on handy form, pgs. 2-3

USE HEADED AND THREADED FASTENERS FOR
ECONOMY AND RELIABILITY



?? LOOKING FOR ??

Stainless Steel
**BOLTS
and
STUDS**

We fabricate every standard alloy steel into bolts, studs and many special fastenings. Accurately made in standard dimensions or to meet your specifications.

BETTER BOLTS

SINCE 1882—

A full line in carbon steel, heat-treated alloy steels, stainless steel, silicon bronze, brass, bronze, and monel metal.

THE BOLT MAN

PAWTUCKET

MANUFACTURING COMPANY

327 Pine Street - Pawtucket, R. I.

THE PLACE TO SOLVE YOUR BOLT PROBLEMS

When inquiring check CP 9837 on handy form, pgs. 2-3

APRIL, 1949

PROCESSING EQUIPMENT

behind or close to source of dust. Installation requires no wall, floor or roof cutting nor any duct work.

Fine dusts are removed by noninflammable spun glass filter.

Description: Model 800 can be used with various buffing and grinding equipment, including double end



Portable dust collector

tool grinders with wheels to 10" diameter, polishers and buffers, belt and disc sanders to approximately 8" diameter. Inlet size for connection with standard sheet metal pipe of flexible metal hose are optional as follows: single 6", single 5", double 4".

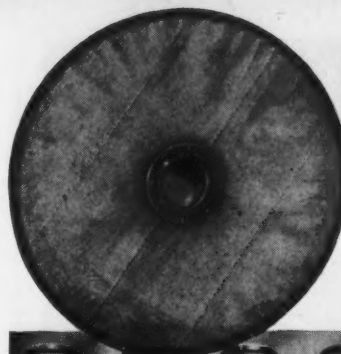
Interconnection of the starting circuit of dust collector with that of the dust creating equipment is recommended so that collector and dust source are off and on simultaneously.

The unit develops a rated 746 cfm at 8000 fpm velocity, with 3.7" water lift. A paddle wheel, self-cleaning fan, direct driven by a continuous duty 3/4 hp motor (3600 rpm) creates suction.

Cyclone separator removes majority of dust. Spun glass filter traps fines. Dust and dirt removed by the cyclone are deposited in removable drawer of the dust collecting bin which forms the base of the unit.

The fine dusts which are removed by the spun glass filter are quickly shaken out by a hand crank. On average installations, shake-down of the filter is required infrequently. Renewal of the filter is said to be required at only prolonged intervals, and is accomplished easily.

Source: Model 800 collector is built by Agat-Detroit Co., Dept. CP, Main at Washington Sts., Ann Arbor, Mich. . . . or for more information check CP 9838 on handy form, pages 2 and 3.



Enlarged view showing general construction of Neva-Clog; two stainless steel sheets arranged to give high flow rates, effective filtration and full retention of solids on the surface. Above — Neva-Clog applied on a large Vallex Filter Leaf.

NEVA-CLOG

Permanent Metallic Filter Medium
with Better Resistance to Corrosion
Erosion, Heat, Pressure, Blinding

**RIGID — DURABLE
NON — PLUGGING
EASY TO APPLY
CLEAN and BACKWASH**

Neva-Clog effectively holds back solids and passes clear liquids, without blinding or clogging; permits use of filter aids. Removal of solids by sluicing, backwashing or blow-back is quick and easy. Outlasts woven metal screens; withstands corrosion, erosion, scraping, chafing, pressure and temperature better than any other filter medium; is easy to insert in any equipment.

Neva-Clog can be fabricated of any metal in flat plates, discs, cylinders or other shapes for any type of filter or for bases in ion exchange or other packed towers, percolation extraction, absorption, separation and other equipment. Write for literature and sample.

W. S. ROCKWELL COMPANY

220 ELIOT STREET • FAIRFIELD, CONN.

When inquiring check CP 9839 on handy form, pgs. 2-3

Now You Can Test Viscosity

as easily as

Temperature or Density

by using a

**BROOKFIELD
VISCOMETER**

COMPLETELY
PORTABLE

RELIABLY
ACCURATE

EXTREMELY
RAPID

In just 30 seconds anyone can test viscosity with the Brookfield Viscometer — no special skills or technical training needed. Readings can be taken in lab or plant with equal ease, as instrument is portable and needs only connection to an electrical outlet. Now you can match laboratory standards in the plant and be sure of uniform results.

Send for our new 8-page illustrated Bulletin which gives full information on the instrument and its applications.

BROOKFIELD
ENGINEERING LABORATORIES, INC.

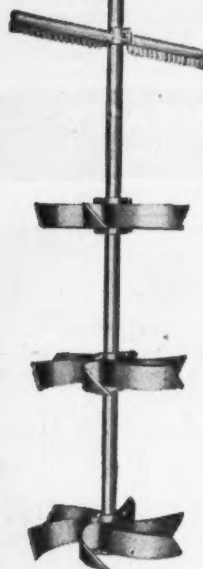
210 Porter Street, Stoughton, Mass.

When inquiring check CP 9840 on handy form, pgs. 2-3

There's more to AGITATION than just an AGITATOR—

and
I*P*E
FITS the
Equipment
to the
Need

Multiple Curved and Pitched
Blade Turbine Agitator for
9000 gal. ester gum reactor.



For years, the process industries have depended upon I*P*E for agitation requirements because of:

- I*P*E's expert engineering approach to agitation problems—based on wide processing experience.
- I*P*E's dependable specifications for the type of agitator to best fit the job.
- The delivery of an agitator that will do its required work well—and long.

Prominent among the I*P*E "Standard-Plus" units because of its wide adaptability, is the

I*P*E TURBINE AGITATOR

—for dissolving, mixing and combination operations where high heat transfer rates are required. Successfully handles suspended materials in relatively high viscosity solutions.

In these operations, no single type of blade will meet all needs. I*P*E offers three styles for selection—each with its own particular function. Pitched blades for a high degree of axial flow motion; Curved blades for radial flow characteristics; Curved and Pitched blades in one unit for combination flow.

An added feature is the use of proper bearings and drives in accord with varying conditions.

Before making "an agitator" selection, consult I*P*E's Engineers—without obligation. You'll benefit from their expert, experienced advice.

1797

Other I*P*E Units Include

Agitators: Side-Entering Propeller Type, Top-Entering Propeller Type, Anchor Type, Paddle Type, Vertical Finger Type. Agitator Drives: Vertical, Right Angle Vertical. Processing Reactors, Kettles, Still, Autoclaves, Absorbers, Dissolvers, Digesters, Crutchers, Dryers, Blenders, Crystallizers, Extruders, Condensers, Heat Exchangers, Mixers, etc.

Send for our complete catalogue



INDUSTRIAL PROCESS ENGINEERS

—ENGINEERS
—DESIGNERS
—MANUFACTURERS

4 LISTER AVENUE, NEWARK, NEW JERSEY
Branch Offices:
Baltimore, Chicago, Cincinnati, Pittsburgh, St. Louis

When inquiring check CP 9841 on handy form, pgs. 2-3

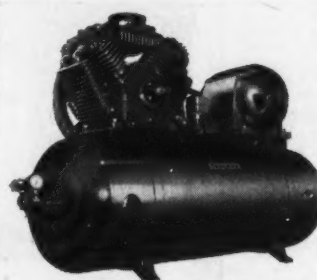
PROCESSING EQUIPMENT

Get more air with cooler operation with 2-stage compressors . . .

units are 4-cylinder, V-type, air-cooled in 7½, 10 and 15 hp sizes

Uses: For air compressor service in processing plants. For operation from common electric outlets and in accordance with various code requirements.

Features: Designed to deliver more air for current consumed. Highly developed two-stage principle used in both banks of cylinders. Displacement of 10 hp unit is 47.86 cfm at 175 psi. Similar high displacement is attained in the 15 hp and the 7½ hp models, all of which are available for 175 psi or 125 psi. All models have extra large inter and after coolers, removable cylinder blocks and valve assemblies. The triple relief valve gives three way safeguard against excessive pressures. A floating tank mount relieves tank of supporting strains and vibrations.



Two-stage compressor

Each compressor is equipped with an automatic pressure switch, mounted on the check valve manifold. This stops the high pressure outfit when pressure is built up to 175 pounds and restarts it when pressure drops to 140 pounds. Medium pressure units are stopped at 125 pounds and restarted at 100 pounds.

Automatic unloader which maintains required pressure in the air tank between minimum and maximum limits without stopping and starting the compressor is available on VD series 125 pounds outfit. It is used in place of the automatic pressure switch.

Description: These "V" type, two-stage air compressors are available in two distinct pressure ranges. Equipment on both is the same. All units are 4-cylinder. Bore in all cases is 4½ inches in first stage and 2½ inches in second stage. Stroke is 4 inches.

The 4-cylinder two stage design divides work between multiple cylinders, thereby generating less heat in each.

The 7½, 10 and 15 hp models are all available for 175 (VA) or 125 (VD) psi use. Gallon capacity of tanks is 80 for the 7½ hp models and 120 for the others.

Source: DeVilbiss Co., Dept. CP, Toledo 1, Ohio . . . or for more information check CP 9842 on handy form, pages 2 and 3.

Duplicate drawings, charts, printed records at 105 sq. ft. per minute . . .

self-contained, automatic, odorless volume unit has built-in constant voltage transformer

Uses: For large volume duplication of drawings, charts, records and various kinds of typed or printed matter, in range of sizes from post card dimensions to a width of 42 inches and to practically any lengths.

Features: Easy to operate. No special skills required. Complete unit is self-contained and requires no plumbing

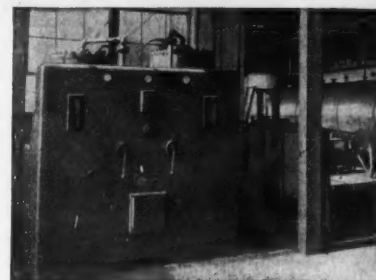
A report on the use of Dorco D-I water in pharmaceutical and cosmetic manufacture.



d-i water

SHARPLY REDUCES COSTS

SIMPLIFIES PRODUCT CONTROL



at

LEHN & FINK PRODUCTS Corporation

Installed over three years ago, the Dorco D-I System shown above has been continuously de-ionizing water for use in the manufacture of pharmaceuticals and cosmetics. Total operating expense has averaged 13 cents per 1,000 gallons of demineralized water produced. The unit has performed exactly as specified when sold . . . and has required no resin replacement in either cell.

At Lehn & Fink, D-I water has resulted in a substantial saving where substituted for distilled water . . . has simplified product control by eliminating a variable when substituted for raw water.

This is but one case where D-I water is paying off on many counts. Regardless of industry, if your process requires water free of dissolved solids, a package or open-type Dorco D-I System will produce it . . . in any amount . . . at a fraction of the cost of distillation.



Write for Bulletin #4081 for complete details.

THE DORR COMPANY ENGINEERS

Ion-Exchange Division

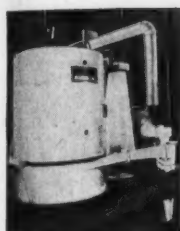
New York 22, N.Y. 570 Lexington Avenue
Chicago 1, Ill. 221 No. LaSalle Street
Denver 2, Colo. Cooper Building

When inquiring check CP 9843 on handy form, pgs. 2-3

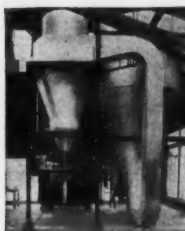
CHEMICAL PROCESSING Preview

BOWEN SPRAY DRYING

20 YEARS in chemical field!



LABORATORY UNIT



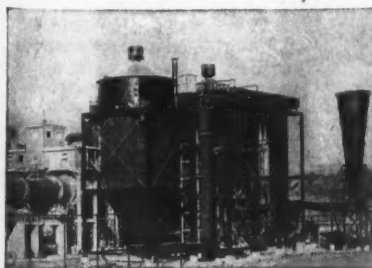
PILOT UNIT

● Based on over 20 years test work experience in the Drug, Chemical and Industrial fields, Bowen Engineering offers a complete service in the field of Spray Drying:

1. TEST FACILITIES
2. LABORATORY SPRAY DRYERS
3. PILOT SPRAY DRYERS
4. PACKAGE PRODUCTION UNITS
5. HIGH TONNAGE SPRAY DRYERS



BOWEN ENGINEERING, INC.
GARWOOD 1, NEW JERSEY



When inquiring check CP 9844 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

connections, ventilating ducts or darkroom. The process is odorless and the machine performs its work automatically.

Material to be duplicated is merely fed into machine and within a few seconds prints are delivered flat, dry and ready for use. This unit is said to be the first volume machine with built-in constant voltage transformer as standard equipment.



Automatic "Whiteprinter" handles volume of duplicating work in widths to 42 inches

Description: Volumetric Model 93 printer produces direct positive (black lines on white or tinted stock) directly from original drawings or records without intermediate steps. Printing speed is up to 105 square feet per minute.

A unique sheet separating device automatically returns the original to operator and sends the print on through the developing unit. Operator can choose front or rear stacking merely by adjusting a lever.

The printer is mounted on casters and can be moved wherever it is needed.

Source: Whiteprinter Volumetric Model 93 is built by Charles Bruning Company, Inc., Dept. CP, 4754 West Montrose Ave., Chicago 41, Ill. . . . or for more information check CP 9845 on handy form, pages 2 and 3.

Heat sulfuric acid, other corrosive agents . . .

electric immersion heating units resist 25% boiling sulfuric acid; all concentrations at 176°F.

Uses: Immersion heating of strong sulfuric acid solutions, other corrosives.

Features: Exceptional corrosion-resistant properties.

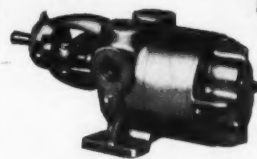
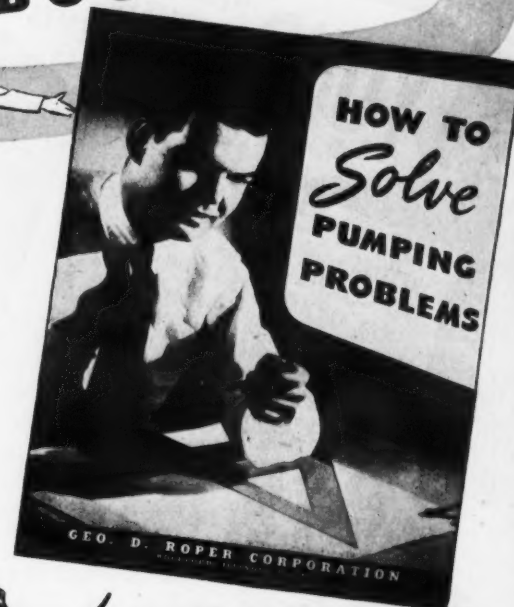
Description: Sheathed in Carpenter stainless steel No. 20; resists all concentrations of sulfuric acid at 176°F, 25% boiling solution. Resists other highly corrosive acids.

Rated at from 200 to 5000 watts; from 115 to 550 volts. Straight lengths up to 176"; can be bent with minimum radius of 1½".

Source: Product of Electro-therm, Inc., Dept. CP, 8024 Georgia Ave., Silver Spring, Md. . . . or for more information check CP 9846 on handy form, pages 2 and 3.

Get this FREE FACT PACKED BOOKLET

Handy
File Size
8½ x 11



by ROPER

Builders of Rotary Pumps for All Industries

It's a valuable guide for those interested in the operation, maintenance, or selection of pumps. It's designed to aid the beginner as well as the experienced pump engineer. Step by step with illustrations and plain language it outlines the basic fundamentals used in estimating requirements of the average pumping job.



It contains time-saving charts and tables covering friction loss in pipes, viscosity conversions, etc. Just mail the coupon below and your copy will be sent free and postpaid.

Mail Coupon Today!



GEO. D. ROPER CORPORATION, 744 Blackhawk Park Ave., ROCKFORD, ILLINOIS

Please send Booklet "How To Solve Pumping Problems" and Catalog No. 949.

NAME

POS.

COMPANY

CITY

STATE

When inquiring check CP 9847 on handy form, pgs. 2-3

**OUR HEAT
TRANSFER
SPECIALTIES**

**YOUR HEAT
TRANSFER
REQUIREMENTS**

KETTLES—Plain, Jacketed, Mixing
AUTOClaves—For General Use
HEAT EXCHANGERS—Straight and U-Tube
COOLERS—For All Liquids and Gases
STORAGE HEATERS—For All Liquids
HEATERS—For all Liquids and Gases
BOILERS & REBOILERS—Heated by Steam,
Electrically, or Any Preheated
Transfer Medium
STILLS—Vacuum or Pressure



The list, which is only partial, is typical of our design and construction service to the processing industry. All are "heat transfer" units, requiring for their efficiency and durability a thorough understanding of heat transfer principles and the behavior of the various industrially used metals under the stress of temperature, pressure and corrosion.

Our sixty-nine years of experience in the field of "heat transfer equipment" should be helpful to you in connection with the selection and construction of your requirements.



THE PATTERSON-KELLEY
Company, Inc.
120 WARREN STREET, EAST STROUDSBURG, PA.

New York Office: 101 Park Avenue, Zone 17
Offices or Representatives in Principal Cities

When inquiring check CP 9848 on handy form, pgs. 2-3

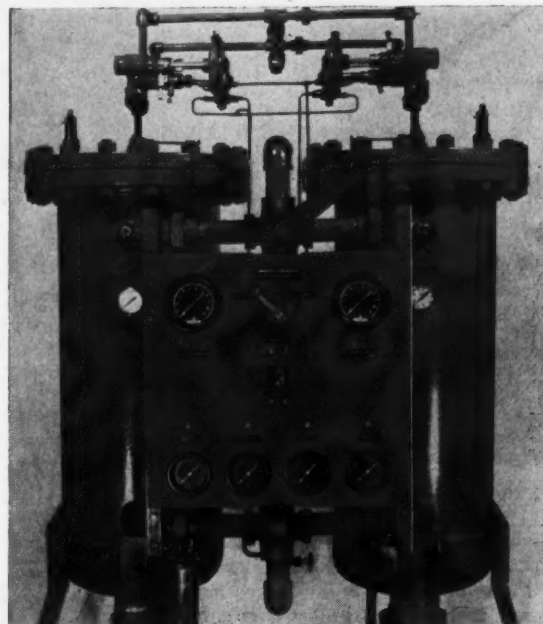
Page 102

PROCESSING EQUIPMENT

**Dehumidifier cleans, dries air
for air supply service; also
gas for piping, etc . . .**

supplies clean, dry, oil-free air or gas for chemical process demands

Uses: To supply clean, dry air for instrument air supply service. Other uses include cleaning and drying many other gases for processing requirements, pipe line transmission, etc.



Cleans, dries air for instrument air supply service

Features: Desiccant is reportedly better than best quality silica gel in absorptive quality; superior to silica gel and activated alumina in resistance to attrition and dusting.

Description: Dual desiccant tower dehumidifier; one tower always in service while other is regenerating. High pressure steam, low pressure steam, and electrical reactivation may be employed. Steam-reactivated dehumidifiers are completely pneumatic, for use with flammable or explosive vapors.

Source: Produced by The Industrol Corp., Dept. CP, 88-35 76th Ave., Glendale, Brooklyn 27, N. Y. . . . or for more information check CP 9849 on handy form, pages 2 and 3.

**Cut labor, shipping costs with
lighter, greater-capacity
acetylene cylinders . . .**

monolithic filler permits faster filling, gives greater gas capacity

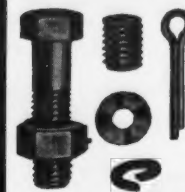
Uses: Handling of acetylene.

Features: Faster filling, greater capacity per unit volume, lighter weight acetylene cylinders.

Description: Cylinders available in 4 sizes: 39 x 12", 30 x 18", 30 x 10", and 24 x 6". All cylinders have 5 safety plugs; manufactured in conformance with I.C.C. specifications. Bottom rings are standard equipment.

Source: Produced by Aetna Cylinders, Inc., Dept. CP, 714 Fisher Building, Detroit 2, Mich. . . or for more information check CP 9850 on handy form, pages 2 and 3.

~~11~~ 10 REASONS FOR USING HARPER



EVERLASTING FASTENINGS

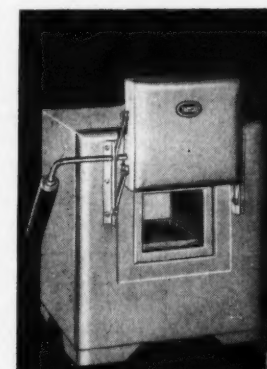
- 1 Resistance to Rust and Corrosion
- 2 Resistance to High Temperatures
- 3 Non-Magnetic
- 4 Non-Sparking
- 5 Re-Usable
- 6 Attractive Appearance
- 7 Easy to Clean
- 8 High Strength
- 9 Long Life
- 10 Lower Ultimate Cost
- 11 RESISTANCE TO FATIGUE

Only 1 Reason for using common steel... Lower First Cost!

Write for Catalog
The H. M. Harper Company
Morton Grove, Illinois
(Suburb of Chicago)
280 Hudson St., New York 13
BRANCH OFFICES: Atlanta,
Cambridge, Cincinnati, Cleveland,
Dallas, Denver, Detroit,
Grand Rapids, Los Angeles, Milwaukee,
Philadelphia, St. Louis,
San Francisco, Seattle, Toronto
(Canada).

HARPER

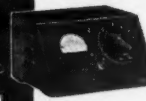
When inquiring check CP 9851 on handy form, pgs. 2-3



It's new

TEMCO SERIES
1600

ELECTRIC FURNACE
HEAT TREATS SMALL PARTS—
IDEAL IN THE LABORATORY FOR
ASHING, IGNITIONS, FUSIONS



New fast-heating TEMCO model built for continuous use to 1650°F.

1900°F. Improved design—welded steel body, 4 1/2" dual insulation, uplifting counter-balanced door. Heavy duty element all four sides.

| MODEL | WITH THERMOMETER | WITH VENTRON |
|-------|---------------------|-----------------|
| 1625 | \$140.00 | \$262.50 |
| 1620 | 142.50 | 262.50 |
| 1635 | 167.50 | 280.00 |
| 1630 | 170.00 | 280.00 |

Write for data and dealer's name

**THERMO ELECTRIC
MANUFACTURING CO.**

476-4 W. Locust St., Dubuque, Iowa

When inquiring check CP 9852 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

PROCESSING EQUIPMENT

Wash gases, coal, metal, ore products with vane-type spray nozzle . . .

made in 17 sizes to fit 1/4 to 2 1/2 inch pipe connections

Uses: For use in chemical plants, washing blast furnace gases, washing coal, ore, gravel, etc. Also for pickling and cleaning metal products.

Features: Non-clogging helical vane principle. The nozzles produce a uniform, full cone mass spray throughout the entire cross section of the spray pattern.



Nozzle core permits free passage of fluids

Description: Standard line is made of brass, but nozzles can also be made in stainless steel and other corrosion-resistant and special purpose metals that are available as machinable bar stock. The accompanying illustration shows the fluid travel around the two vane helix, which sets up two rotating jets to produce the characteristic full mass spray.

Source: Binks Mfg. Co., Dept. CP, 3122 Carroll Ave., Chicago 12, Ill. . . . or for more information check CP 9853 on handy form, pages 2 & 3.

Lists electric controls, specifications

Electric control devices are described in revised edition of catalog. Descriptions, specifications of resistors, rheostats, relays, accessories, and miscellaneous A.C. and D.C. controls included.

"Electric Control Devices", issued by Ward Leonard Electric Co., Dept. CP, Mount Vernon, New York. When inquiring specify CP 9854 on handy form, pages 2 and 3.

CORROSION COSTS \$6,000,000,000.00

ANNUALLY!

**No industry escapes...
how much do you pay?**

Save needless waste

In one form or another acids, alkalis, salts, gases and atmospheric conditions cause corrosion damage. In every industry losses are prevalent — losses in time, materials and equipment, much of which could have been avoided. Minimize your risk — do these two things now —

- 1 — Check up on your costs;
- 2 — Provide adequate protection for danger points.

Experienced and competent Amercoat engineers are available to help you on both. They'll check up on your costs, which may be greater than you know because the effects of corrosion are often hidden. They'll report on conditions as they find them. They'll recommend steps to take if greater protection can be provided and money saved. Inquiries from interested executives will receive prompt attention. There's no obligation — write today.

AMERCOAT DIVISION
AMERICAN PIPE AND CONSTRUCTION CO.
Dept. 1H, 4809 Firestone Blvd., South Gate, Calif.

EXAMPLE OF NEEDLESS LOSS — This 6" valve has been exposed to atmospheric conditions, near the seacoast. Improperly coated, it was ruined in a short time.

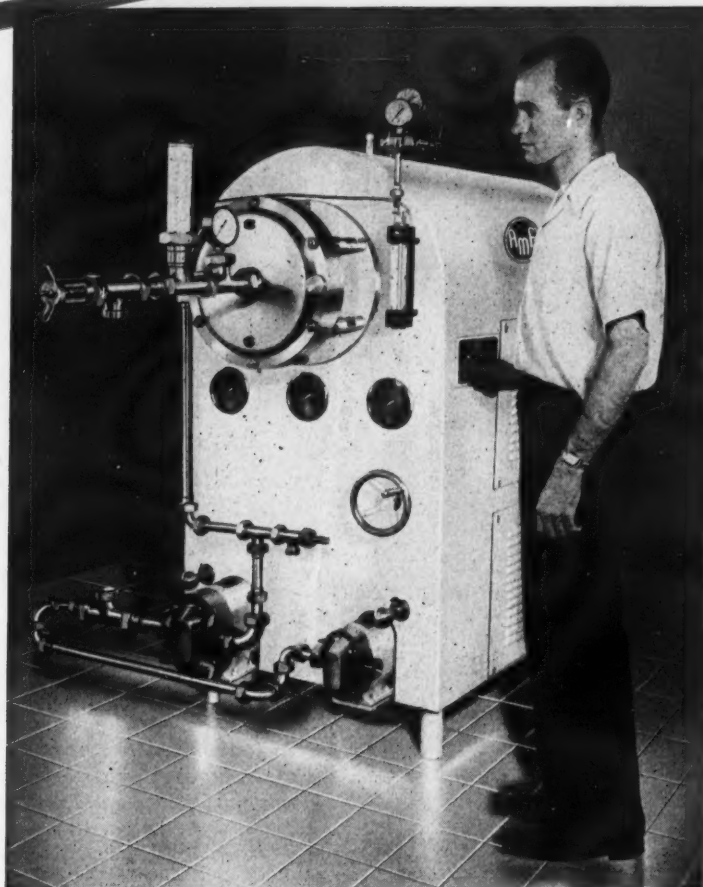
**FOLLOW THE LINE OF
most RESISTANCE**



**A SYSTEM OF
SURFACE PROTECTION**

NEW

REVOLUTIONARY CONTINUOUS, AUTOMATIC MIXING METHOD



The AMF OAKES Continuous, Automatic Mixer answers the need for constant quality product control in large volume production plants.

Better mixing at reduced operating costs.

NOW OPERATING ON SPONGE RUBBER AND CHEMICALS.

Ideal for mixing, blending, emulsifying, stabilizing, dispersing.

Requires floor space of only 2' x 3½'.

For complete details on this new, revolutionary method of continuous, automatic mixing, write for Descriptive-Data Booklet DM-499A. AMERICAN MACHINE & FOUNDRY COMPANY, 485 Fifth Ave., New York 17, N. Y.



OAKES CONTINUOUS AUTOMATIC MIXER

When inquiring check CP 9855 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

Simplify tightening of nuts in hard-to-reach places with finger wrench . . .

series of wrenches available for ¼", 5/16", 11/32" and 3/8" sizes across the flat

Uses: Simplifies the job of placing and tightening small nuts in locations not easily reached by ordinary wrenches. Especially useful in such fields as the electrical, radio, machine, sheet metal fields.

Features:

Wrenches are formed from high-strength steel, nickel-plated. Operation is simple as shown in illustration demonstrating how tool holds nut in an out-of-sight location, while bolt of screw is being tightened.

Description:

A series of these finger wrenches is now available, corresponding to the most widely used nut sizes:—¼", 5/16", 11/32" and 3/8" across the flat. They are instantly adjustable to any size finger.

Source: F. E. Redfield, Dept. CP, 31 Colonial Parkway, Dumont, N. J. . . . or for more information check CP 9856 on handy form, pages 2 and 3.



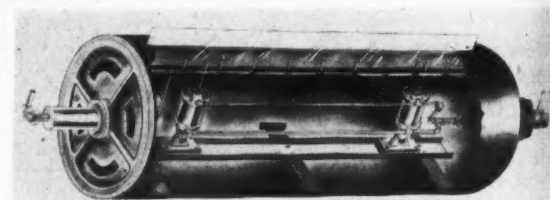
Finger wrench tightens nuts in inaccessible locations

Cut-off roll for wet boards controls automatically . . .

production is continuous; knife action is instantaneous, positive in action

Uses: This new automatic cut off roll is now being used in producing fibre (shoe) board, binders board, brake and clutch lining stock, automobile board, asbestos-cement products, transformer board, wet laps, etc.

Features: Complete Make Roll incorporates an automatic cut-off knife electrically controlled, pneumatically operated and positive in action. Production is continuous; the roll travels at a constant rate of speed and is not slowed down or stopped for the cut-off. The action of the knife is instantaneous. New plies for the next sheet start building up on the roll immediately without any interruption.



Roll permits manufacture of laminated or combined sheets 12 ft. square or larger

Description: This roll for wet board machine is the result of years of trial and elimination with many different types of knife mechanisms. Included in these trials were knives operated manually, automatically and semi-auto-

CHEMICAL PROCESSING Preview

PROCESSING EQUIPMENT

matically with hydraulic, pneumatic, electric, cam, spring and lever actions of both internal and external construction. Throughout these trials the pneumatic type, internally operated and combining several other important features, gave the most outstanding performance.

The cut-off knife is actuated by pneumatic cylinders, which in turn are electrically controlled through relays and adjustable electric counter. The counter can be set at any predetermined number of revolutions to produce identical sheets of uniform thickness within the limits of vat control.

Air pressure, released through special jets along the face of the roll, and timed with the strike of the knife, aids in stripping the sheet from the roll after the cut is made.

Rolls, when installed on machines, allow higher speeds, eliminate hazards in connection with manual removal of sheets, decrease waste and give more uniform sheets. Manufacture of laminated or combined sheets 12 ft. sq. or larger is possible. Previous average size made was less than 4 feet square.

Source: The Raywood automatic cut-off roll is a product of Noble & Wood Machine Co., Dept. CP, Hoosic Falls, N. Y. . . or for more information check CP 9857 on handy form, pages 2 and 3.

Counts up to 6000 items per minute . . .

photo-electric detector facilitates accurate counting of small objects, closely-spaced parts

Uses: To count accurately at speeds at which mechanical counters are inaccurate or wear rapidly.

Features: Electronic decade, operated by photo-electric detector, scales down counting speed of mechanical counter by factor of ten, increasing accuracy and lengthening operating life.

Description: Photo-electric beam is 1/4" wide, permitting counting of small or closely spaced parts. Photo-electric detector is in small separate housing, providing mounting flexibility. Electronic decade operates electromechanical counter, scaling down its operating speed by factor of ten. Last digit of number is registered on neon bulbs of electronic counter, and remainder are indicated on six-digit electromechanical register.



Photo-electric counter designed for high-speed operation

Source: Produced by Potter Instrument Co., Inc., Dept. CP, 136 Roosevelt Ave., Flushing, N. Y. . . or for more information check CP 9858 on handy form, pages 2 and 3.

SMALL STEAM LEAKS

add up!

Showing cost of various sized steam leaks at 100 pound pressure.
(Assuming steam costs 50 cents per 1000 lbs.)

| Size of Orifice | Lb. Steam Wasted Per Month | Total Cost Per Month | Total Cost Per Year |
|-----------------|----------------------------|----------------------|---------------------|
| 1/2" | 835,000 | \$417.50 | \$5,010.00 |
| 3/8" | 470,000 | 235.00 | 2,820.00 |
| 1/4" | 210,000 | 105.00 | 1,260.00 |
| 1/8" | 52,500 | 26.25 | 315.00 |
| 1/16" | 13,200 | 6.60 | 79.20 |
| 1/32" | 3,400 | 1.70 | 20.40 |

(For steam at 50 pounds pressure, the waste is about 75% of the above figures; at 20 pounds, it is about 50%; and at 5 pounds, the loss is about 25%.)

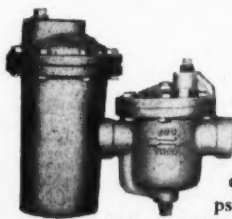


TYPICAL FUEL SAVINGS SECURED WITH ARMSTRONG TRAPS

20% FUEL SAVINGS after trapping all heating coils, individually. — Norton Greenhouses, St. Paul, Minn.

33-1/3% REDUCTION IN ANNUAL COAL BILL after installing Armstrong traps on cooking vats. — Ralph L. Smith Lumber Co., North Kansas City, Mo.

3,728 GALLONS OF FUEL OIL SAVED in one year after replacing old traps with Armstrongs on kettles, low pressure heating system and cream beaters. — Mary Lincoln Candies, Buffalo, N. Y.



STEAM SAVERS:

For trapping heating systems and process equipment from 1 to 250 psi, Armstrong Traps are available in side inlet—side outlet or bottom inlet—top outlet body styles. These compact, dependable traps provide more actual hot condensate capacity per dollar of trap investment than any other traps on the market. For selection data, capacities and prices SEND FOR the 36-page ARMSTRONG STEAM TRAP BOOK.



ARMSTRONG

STEAM TRAPS

Factory Representatives in 48 Key Cities... Traps Stocked at 147 Points

When inquiring check CP 9859 on handy form, pgs. 2-3

CHECK YOUR STEAM TRAPS now!

The chart above shows that a "little" steam leak can cost a lot—and a hundred or a thousand little leaks cost a lot more! No plant can afford the luxury of leaky steam traps. It costs far more to keep them than it does to replace them with modern Armstrong Inverted Bucket Steam Traps. Armstrong Traps won't leak steam because:

1. The valve and seat are ground and lapped to a precision, steam-tight fit.
2. The valve is water-sealed at all times.
3. Both the valve and seat are made of chrome steel, heat treated for long life and corrosion and erosion resistance.

With today's high fuel and operating costs Armstrong traps are priced lower in proportion to the savings they can effect than at any time in their history. Let your nearby Armstrong Representative help you select the traps you need or write direct to the factory.

ARMSTRONG MACHINE WORKS

880 MAPLE ST., THREE RIVERS, MICH.



FLEXCO
HD
BELT
FASTENERS
AND
RIP PLATES

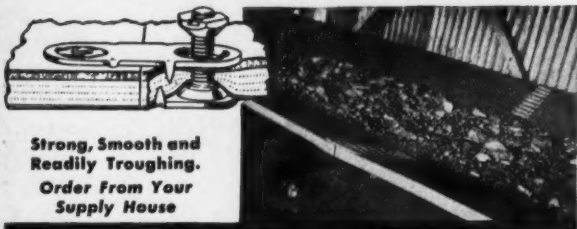
FOR HEAVY CONVEYOR AND ELEVATOR BELTS OF ANY WIDTH

Flexco HD Fasteners make a tight, butt joint of great strength and durability . . . distribute the strain uniformly. Operate smoothly over flat, crowned or take-up pulleys. Made of steel, Monel, Everdur and Promal.

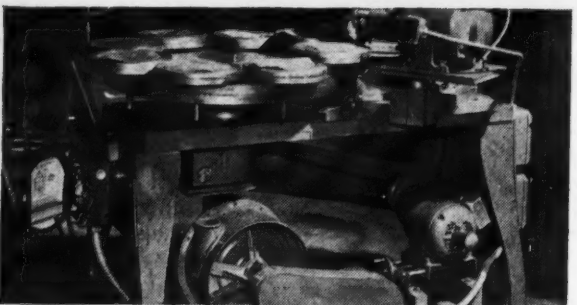
Flexco Rip Plates are for repairing and patching damaged belts.

Ask for Bulletin F-100

FLEXIBLE STEEL LACING COMPANY
4649 Lexington St., Chicago 44, Illinois



When inquiring check 9860 on handy form, pgs. 2-3



HOLDING RUBBER PATCHES WITH VACUUM

When these rubber patches pass under the motor driven wire brushes, they are held flat and firmly by the Spencer vacuum producer shown underneath the machine. This is another automatic use of built-in vacuum.

Spencer equipment is also used to clean and deflate rubber goods and to furnish air pressures up to 10 lbs. for testing rubber boats, inner tubes and other rubber products. Spencer Vacuum removes large quantities of talc from floors, walls, ceilings and machinery in rubber plants.

356-V

150 USES FOR VACUUM...ASK FOR BULLETIN
SPENCER VACUUM
HARTFORD CLEANING
THE SPENCER TURBINE COMPANY, HARTFORD 6, CONN.

When inquiring check CP 9861 on handy form, pgs. 2-3

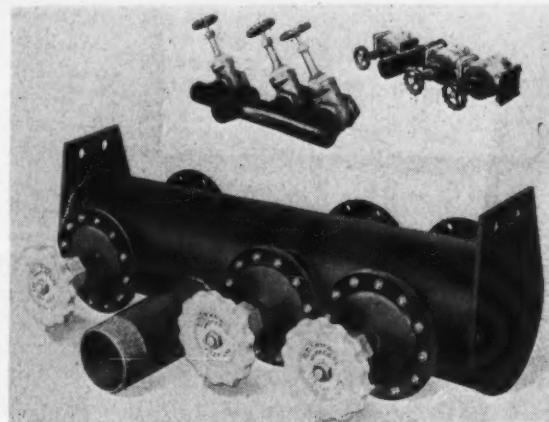
PROCESSING EQUIPMENT

Head loss in manifold valve is low; flow is fast . . .

streamlined design conserves space; wide choice of valve arrangements is possible

Uses: Manifold valve for handling oil and other liquids.

Features: Larger flow areas permit faster flow of materials with less loss in head. Easily cut and welded to



Evolution of the manifold valve

meet any requirement; many valve arrangements are possible. Design eliminates leakage, it is reported. Streamlined construction takes up limited amount of space.

Description: The Warren manifold valve is made from sturdy seamless steel tubing and stampings. Illustration with this article shows different types of manifold valves, old and new.

Source: Designed and manufactured by Betts Machine Company, Dept. CP, Warren, Pa. . . . or for more information check CP 9862 on handy form, pages 2 and 3.

Combines heat-sealing and vacuumizing in one easy operation . . .

single foot-pedal regulates both vacuum and sealing; removes need for vacuumizing chamber

Uses: Vacuumizes and heat-seals flexible package in one operation.

Features: Eliminates need for vacuumizing chamber. Unit is no larger than ordinary heat-sealing machine and is no more difficult to operate.

Description: After bag is inserted between sealing jaws, first movement of foot-pedal on machine pulls the vacuum which can be regulated to suit contents of package. Further pressure on pedal, without removing foot, brings about sealing operation.

Not yet incorporated into the machines is a method for replacing the air removed from the package with an inert gas. Now in the experimental stage is a stretch-wrapping machine for putting a tight-fitting layer of heat-seal material over various types of products. Tests indicate that this machine has promise in wrapping to prevent moisture penetration.

Source: Product of Seal-Vac Corp., Dept. CP, 1224 Commercial Trust Bldg., Philadelphia, Pa. . . . or for more information check CP 9863 on handy form, pages 2 and 3.



**COVER PIPES
TANKS, WALLS**

**INDUSTRIAL
NoDrip**

Anyone can brush, trowel or spray NoDrip on any clean, dry surface. Goes on like plaster, forms a seamless, protective coating. **STOPS CONDENSATION DRIPI** NoDrip keeps equipment and floors safe and dry; prevents corrosion of metal and prolongs the life. Acid, alkali and brine resistant. Comes in 1, 5 and 55 gal. drums, ready for use.



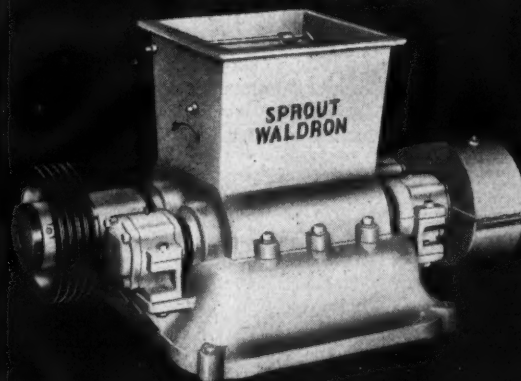
TRY NoDrip
Apply NoDrip to a small area, compare the results with uncovered portions.

Send for free NoDrip Handbook

J. W. MORTELL CO. 530 Burch St., Kankakee, Illinois

When inquiring check CP 9864 on handy form, pgs. 2-3

PRELIMINARY CRUSHERS
... by Sprout-Waldron



A Type and Size to Meet Your Individual Requirements

Few materials can be economically reduced from lump size to final degree of fineness in one operation. To prepare for final reduction, S-W Crushers are designed to handle materials which are soft, pressure-sensitive, tough, friable, crystalline, or fibrous.

For best recommendations, consult Sprout-Waldron today!

SPROUT-WALDRON & COMPANY

Manufacturing Engineers

10 WALDRON STREET

MUNCY, PA.

When inquiring check CP 9865 on handy form, pgs. 2-3

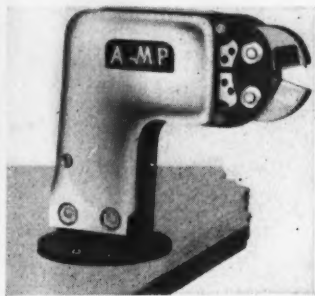
CHEMICAL PROCESSING Preview

PROCESSING EQUIPMENT

Seven different heads used on bench press for cutting, notching, etc. . . .

foot operated bench unit leaves both hands free

Uses: Cuts wire, rod, sheet metal, etc. Cutting head supplied with press can be removed and any one of seven other special heads can be quickly inserted. The other heads perform



Press cuts wire, rod, sheet

such operations as indenting, knock-outs, nibbling, "U-ing", notching and installing solderless terminals. Blank heads may also be used.

Features: Both hands are left free to guide the work. Operator has clear, unobstructed view of the work at all times.

Description: "Ampli-Versal" press comes equipped with cutting head. It is boxed complete with foot pedal, adjustable pedal rod, etc., all ready to set-up. Requires minimum bench space.

Source: Aircraft-Marine Products, Inc., Dept. CP, 1559 No. 4th St., Harrisburg, Pa. . . . or for more information check CP 9866 on handy form, pages 2 and 3.

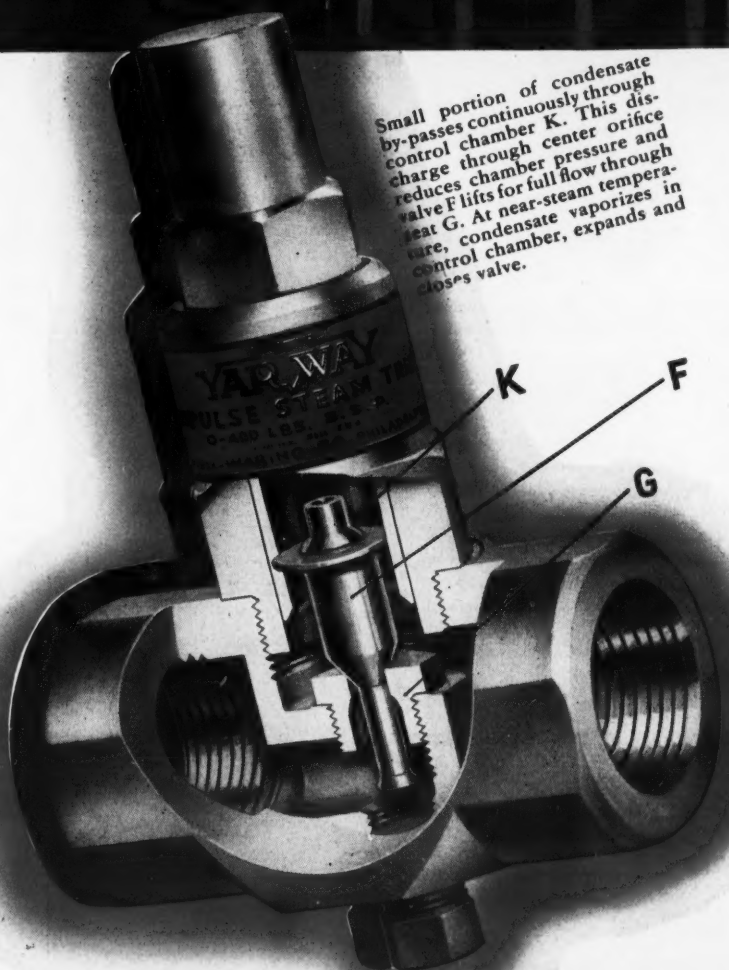
Covers field assembly of pressure vessels

Describing problems encountered in fabrication and transportation of all-welded, heavy-wall pressure vessels, 24-page booklet sets forth methods used to cut costs and enhance dependability of field-assembled vessels.

Bul. V-44, issued by A. O. Smith Corp., Dept. CP, P. O. Box 2023, Milwaukee 1, Wis. When inquiring specify CP 9867 on handy form, pages 2 and 3.

For more information on product at right, specify CP 9868 . . . see information request blank between pages 2-3.

SIX and How They Work!



Six Yarway Impulse Steam Traps—doing a big job draining condensate from a battery of autoclaves used for experimental extraction of tanning materials. They are typical of the two hundred Yarway Traps installed on a variety of steam equipment at the big Eastern Regional Research Laboratory of the United States Department of Agriculture.

Why were Yarways selected for this important work? For the same reason that over 600,000 Yarways have been bought in less than 10 years for use throughout all industry. Users from coast-to-coast report Yarways get equipment hotter, sooner.

In addition, maintenance is easy. There is only one moving part, a simple valve. Small size speeds installation . . . no extra supports are needed. Yarways are good for all pressures without change of valve or seat. And finally, it often costs no more to install Yarway Impulse Traps than to repair older types.

See your nearest Mill Supply dealer, or write for Bulletin T-1739.

YARNALL-WARING COMPANY
125 Mermaid Avenue, Philadelphia 18, Pa.
Yarway Traps are also made and sold in Canada

YARWAY IMPULSE STEAM TRAP

**CUT HIGH OPERATING COSTS...
DURING THE WARM MONTHS!**



**Get Low-Cost
HOT WATER
with
CHROMALOX
Electric
Circulation
Heaters**



Efficient CHROMALOX Electric Heaters eliminate expensive coal or oil fired steam-boiler operation during the months boilers are not used for plant heating.

These easy-to-install Heaters connect to the water tank . . . or directly to water-utilizing equipment for "made-on-the-spot" hot water. Automatic or manual controls assure a plentiful and dependable supply at low cost.

CHROMALOX Circulation Heaters are also used for pre-heating cheaper fuel oils, heating oil-jacketed processing equipment and superheating steam. In fact, these and many other CHROMALOX Electric Heaters can do hundreds of heating jobs in your plant more efficiently and at less cost.

CHROMALOX

Electric Heat for Modern Industry

EDWIN L WIEGAND COMPANY • 7517 THOMAS BOULEVARD • PITTSBURGH 8, PA.

When inquiring check CP 9869 on handy form, pgs. 2-3

**THESE ADVANTAGES
ARE YOURS WITH
CHROMALOX
ELECTRIC HEAT**

- 1. EFFICIENT** heat when and where you need it.
- 2. ECONOMICAL** initial cost, low operating and maintenance costs.
- 3. ACCURATE** temperature control holds heat within desired limits, maintained thermostatically or manually.
- 4. WIDE SELECTION** to meet your specific heat requirements.
- 5. PROVED** performance in the shops, laboratories and offices of leading industrial plants.
- 6. BETTER** process, production and product—uniformly high in quality.
- 7. NATION-WIDE** organization of Application Engineers to give you practical "on-the-job" assistance.

WANT MORE KNOW-HOW?

Send for Catalog No. 42 on CHROMALOX Electric Heaters; the useful booklet of application ideas "100 Ways to Apply Electric Heat", and the address of CHROMALOX Application Engineer serving you.



PROCESSING EQUIPMENT

Pump semi-solids through pipes and conduits . . .

rotary pump handles any material that can be forced through pipes

Uses: To transmit semi-solids such as tannery fleshings, paint and varnish ingredients, pulp stock, sludge, etc., through pipes or conduits.

Features: Eliminates open conveying, trucking, manual handling of semi-solids.

Description:

Positive action, continuous flow operation. Rotor blades are loaded with material from hopper, force load toward discharge port. As blades near discharge, they retract into rotor to pass scraper plate. Blades gradually extend to casing before reaching feed point.

Capacity up to 540 cubic ft. per hour. Available with horizontal or vertical discharge.

Source: Produced by Roto-Flo Pump Co., Dept. CP, 249 N. Water St., Milwaukee 12, Wisconsin. When inquiring specify CP 9870 on handy form, pages 2 and 3.



Forces semi-solids through pipe

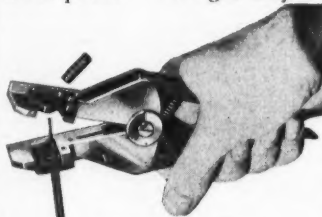
Strip wires clean and bare up to full 7/8 inch . . .

light, 10-oz. stripper operates with minimum pressure; jaws return automatically for next cut

Uses: Strips building, fixture, telephone, automotive, instrument wire and cable.

Features: "Automatic" single-squeeze operation. Jaws are held open after stripping to permit removal of wire and prevent crushing. A light squeeze on the handles strips wire clean and bare up to full 7/8 inch.

Description: Weighs only ten ounces. Simple design and sturdy construction make it practically abuse-proof. When handles are released and wire removed, jaws snap back into position ready for the next cut.



"One-squeeze" stripper

Just five models handle all wire gauges from 8 to 22. Blades are interchangeable on all models. There is no possibility of nicking or cutting the wire or fraying the wire ends. The cutter ends are shielded for complete safety. When it is necessary to remove blade it is done quickly by removal of two screws.

Source: Ideal Industries, Inc., Dept. CP, Sycamore, Ill. . . . or for more information check CP 9871 on handy form, pages 2 and 3.



That's KEWAUNEE! You pay nothing extra for the custom design, custom engineering and custom quality that go into Kewaunee Laboratory Furniture. At the same time, Kewaunee brings to your laboratory a new high in efficiency and work-saving convenience.

Built strong for hard use. New door suspensions will support the weight of a normal man without sagging or damage. Drawer guides are made of heavier gauge steel to operate smoothly and quietly under heavier loads. Beautifully finished in baked enamel over Bonderized steel, to resist rusting, peeling and chipping. KemROCK working surfaces are resistant to acids, alkalis, solvents and ordinary physical shock.

Write for free catalog. No obligation. Address:—

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Representatives
in
Principal
Cities

Kewaunee Mfg. Co.
C. G. Campbell, President
5011 S. Center St. Adrian, Michigan

When inquiring check CP 9872 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

Aprons, sleeves are easy to keep clean, protect against acids, etc. . . .

made of plastic, seamed electronically and are stainproof

Uses: Protect wearers against chemicals, greases, dirt, solvents.

Features: Non-porous, non-absorptive and will not crack or deteriorate at normal working temperatures. Stainproof, odorless and easy to keep clean.



Apron and sleeves protect against chemicals

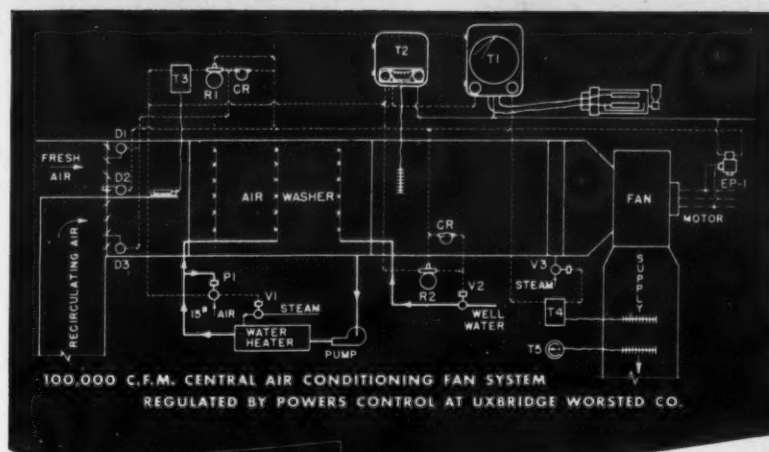
Description: Strong, long-wearing and light in weight. Seams are electronically welded and plastic neck and waist straps are permanently sealed to the garment at one end, fitted with adjustable snap fasteners at the other.

Source: Mine. Safety Appliances Co., Dept. CP, Braddock, Thomas and Meade Sts., Pittsburgh 8, Pa. When inquiring specify CP 9874 on handy form, pages 2 and 3.

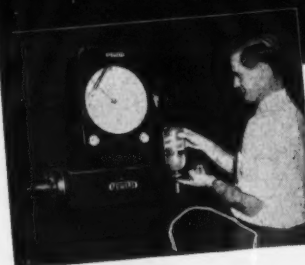
Rotary positive blowers are four types

Rotary positive blowers, their operation, advantages and principle uses, are presented in a 20-page, 2-color bulletin. Performance curves under varying operating conditions are included. Four standard types are discussed, with condensed specifications, complete views and cross-sections.

Accessories, including relief valves, are shown, described. Action views of gear cutting and impeller balancing in maker's main machine shop are included. Bul. 22-23-B-13, issued by Roots-Connorsville Blower Corp., Dept. CP, Connorsville, Ind. When inquiring specify CP 9875 on handy form, pages 2 and 3.



100,000 C.F.M. CENTRAL AIR CONDITIONING FAN SYSTEM
REGULATED BY POWERS CONTROL AT UXBRIDGE WORSTED CO.



POWERS

AIR CONDITIONING CONTROL
with year 'round accuracy of 1°F. plus or minus regulates over 300,000 C.F.M. at—
UXBRIDGE WORSTED CO.

(T-1) POWERS WET AND DRY BULB RECORDING-CONTROLLING PSYCHROMETERS at Uxbridge Worsted Mill regulate—

| | | | | |
|-------------------------------|---|--------|---|---|
| One 100,000 C.F.M. fan system | " | 80,000 | " | " |
| " | " | 12,000 | " | " |
| Two 60,000 | " | " | " | " |

(T-2) POWERS INDICATING SUB-MASTER DEWPOINT REGULATORS automatically control the air washers POWERS dampers, valves, relays and other devices are used with T-1 and T-2 to obtain the accurate control mentioned above.

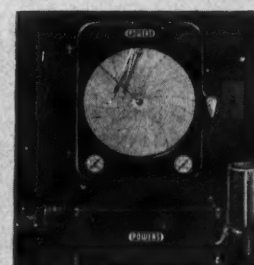
20 to 30% Increase in Efficiency—claimed for modern air conditioning installed in carding, spinning, winding, weaving and sewing departments in Uxbridge, Mass., Mill. Dry bulb temperature of 78° F. and Wet bulb at 68° F.—accurately maintained at all times by POWERS control —helps produce a better product at lower cost.

For Better Air Conditioning Control and valuable aid in selecting the right equipment for your requirements contact our nearest office: BOSTON, 125 St. Botolph St.—NEW YORK, 231 E. 46th St.—PHILADELPHIA, 2240 N. Broad St.—GREENSBORO, N.C., Jefferson Standard Bldg.—ATLANTA, 142 Spring St.—Also, BIRMINGHAM and NASHVILLE. (ACU)

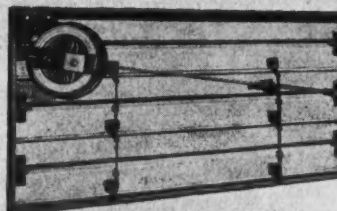
A FEW OF THE MANY DIFFERENT TYPES OF POWERS CONTROLS



Above: T-2 Powers Series 100 Sub-master Dewpoint Indicating Regulator.
At Right: Powers Series 100 Wet and Dry Bulb Recording-Controlling Psychrometer.
Below: D-1-2-3 Powers Louvre Damper.



Above: T-3-4 Powers Type K Remote Bulb Thermostat.
Below: T-5 Powers Remote Bulb Dial Indicating Thermometer.



V-1-2-3 Powers Diaphragm Valve



THE POWERS REGULATOR CO.

OFFICES IN 50 CITIES • SEE YOUR PHONE BOOK

Over 55 Years of Temperature and Humidity Control



MEASURE...
INDICATE...
TOTALIZE...
CONTROL...

the FLOW OF
PRACTICALLY
ALL LIQUIDS

Maintaining the proper flow of liquid is a relatively simple job once a Hays Veriflow Meter and Hays Veritrol Controller are installed. They supplant guesswork with dependably accurate measurement and control of both the rate of flow and total flow of practically any piped fluid. What's more, the rate-of-flow indicator is designed for remote reading. Result: accurate measurement, product control, cost control, uninterrupted service. If you make or use liquid in volume it will pay you to consider this modern flow meter. WRITE FOR BULLETIN 48-766.

The HAYS CORPORATION
SINCE 1901
COMBUSTION & INDUSTRIAL INSTRUMENTS & CONTROL
MICHIGAN CITY, INDIANA, U.S.A.

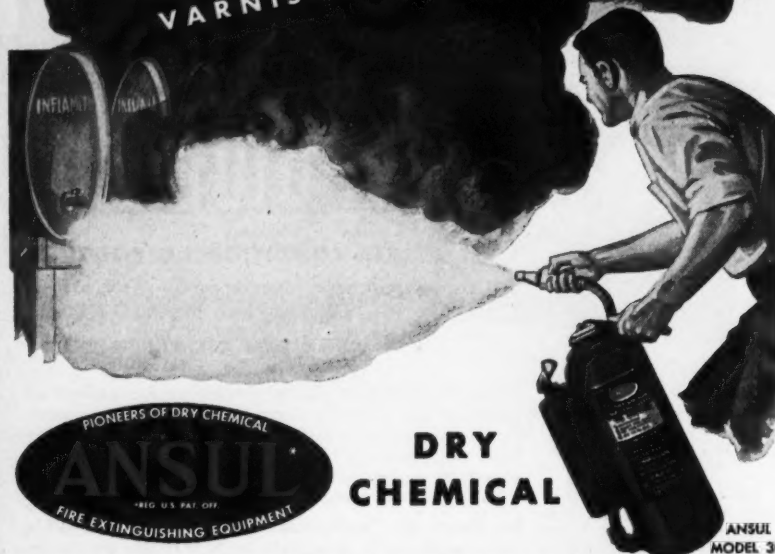
When inquiring check CP 9873 on handy form, pgs. 2-3

APRIL, 1949

When inquiring check CP 9876 on handy form, pgs. 2-3

FOR FLAMMABLE LIQUID FIRES

GASOLINE • NAPHTHA • BENZENE
ALCOHOL • LACQUER • PAINT
VARNISH • SOLVENTS • ETC.

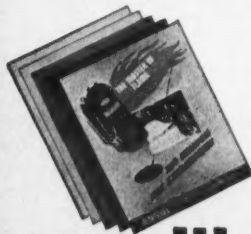


FIRE EXTINGUISHERS ARE YOUR **BEST** PROTECTION

...and most economical, too! Tests conducted by impartial, nationally recognized approval laboratories have proved the superiority of Ansul Dry Chemical Fire Extinguishers on *Flammable Liquid Fires*.

Processing, handling, transferring, and storing of flammable liquids and gases involve fire hazards which demand the best in first-aid fire protection. For years the major chemical and petroleum processing plants have been using Ansul Extinguishers as their first line of fire defense. There is a reason...

Get the facts. Send for your copy of File No. 403. You'll also receive our latest literature together with comparative rating charts for the various types of fire extinguishers.



- Safe for use on electrical fires, too! Even high voltages are not conducted by dry chemical stream.
- Can be recharged at scene of fire furnishing continuing protection.
- Annual recharging is not necessary. Low maintenance cost.
- Longer range stream of dry chemical is effective in winds and drafts.
- Ansul Dry Chemical is non-abrasive, non-corrosive, non-toxic.
- Listed and Approved by Underwriters Laboratories and Factory Mutual Laboratories.

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION, MARINETTE, WISCONSIN
DISTRIBUTORS IN PRINCIPAL CITIES IN THE UNITED STATES, CANADA, AND OTHER COUNTRIES

When inquiring check CP 9877 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

Vents high-pressure air from steam equipment up to 600 psig...

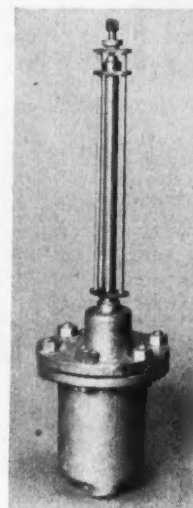
four sizes of air-escape valve permit fast heating, effective gravity return without traps, etc.

Uses: High-pressure air vent for steam-using equipment such as manufacturer's "Speedylectric" boilers. For rapid and continuous escape of air from equipment and piping, at the same time closing tightly against both steam and hot or cold condensate. For handling pressures up to 600 psig.

Features: Properly installed on condensate return line of presses or other steam-using equipment, it is said to provide the answer to fast heating and effective gravity return in closed systems, eliminating traps, condensate receivers, pumps, motors, relays, floats and controls.

Description: Four models handle various pressure ranges up to 600 psig. Trade name: "Speedyvent."

Source: A product of Livingstone Engineering Company, Dept. CP, 100 Grove St., Worcester 5, Mass. . . or for more information check CP 9878 on handy form, pages 2 and 3.



Hi-pressure air escape valve

Lab weighing accurately performed on 120 gram balance...

principle is beam balancing by ribbon metal bands acting in torsion

Uses: For fast, accurate service in laboratory weighing.

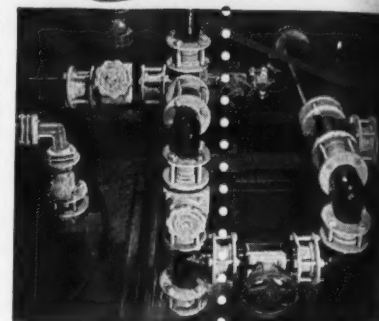
Features: This new balance is a torsion balance, with no departure from the principle of a beam balancing by means of ribbon metal bands acting in torsion, rather than pivoting on knife edges. Other than adherence to basic principle, the new product has undergone a complete re-engineering and modernization of design. Dust has been excluded in a notable degree. The joints between glass and metal are gasket sealed. The openings through the case are fewer and of closer fit to the parts which pass through them. The raised grommets around balance pan supports make the top plate easy to dust off without particles falling inside.



Balance has sensitivity rating of 2 milligrams (1/32 grain)

The torsion balances are of a new alloy that is said to practically eliminate corrosion hazards. The new, larger balance pans are of polished stainless steel. Single balance pointer moving across index is an advantage since the

Now you can FORGET ABOUT Corrosion



on...

Make your process equipment of HAVEG—and you can forget about corrosion! HAVEG is a different molded structural material that resists chemical action through its entire mass. Not just a lining or coating, its utility is not affected by surface gouges and abrasion. Moreover, HAVEG

is strong. It resists shock. And it is remarkably easy to machine!

Standard items such as pipe, fittings, etc. can be shipped to you right from stock... specially designed and built tanks, and other "custom-built" equipment, will be delivered in just 4 weeks or less! So get your order in today—or write for the engineering bulletin F-5, today.

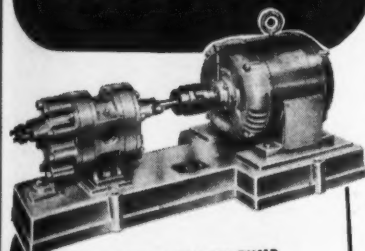
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When inquiring check CP 9879 on handy form, pgs. 2-3

SIER-BATH ROTARY PUMPS

have no time
for
down-time



SIER-BATH GEAREX PUMP

Balanced axial thrust . . . pulseless flow . . . vibrationless operation . . . roller bushings for precision running under load.

Pumps: oils, varnishes, solvents, molasses, chemical solutions.

Capacities: 1-550 g.p.m.

Discharge: 250 psi for medium or high viscosities. 50 psi for water.

For higher pressures and capacities use SIER-BATH SCREW PUMPS.

A notable feature of Sier-Bath Rotary Pumps is their relative freedom from down-time for repairs and maintenance. Built in a shop equipped for manufacture of the finest precision gears, Sier-Bath Pumps show surprising ability to stand up under the most rugged operating conditions. The value of such sturdy construction cannot be over-emphasized in these days of high operating costs.

ALSO MAKERS OF SIER-BATH PRECISION GEARS

FOUNDED 1905

MEMBER A.G.M.A.

Sier-Bath
GEAR and PUMP CO., Inc.

9253 HUDSON BLVD., NORTH BERGEN, N. J.

When inquiring check CP 9880
on handy form, pgs. 2-3

PROCESSING EQUIPMENT

index is angle-positioned for easiest possible reading. Weighing is speeded by the fact that no weights below 15 grains (1 gram) are needed. The rider is sufficient for everything below this mark.

Description: The metal case has heavy hard-surfaced fired glass panels set in rubber gaskets, giving excellent protection against accidental damage. The beam graduations are in two parallel scales, one in grains, the other in grams. One is in black and the other in red to guard against confusion. The rider is so designed that it will not jar out of its setting unless the balance is subjected to considerable movement. Overall dimensions: length 11 inches; depth 6 inches; height 6 $\frac{5}{8}$ inches.

Source: Torsion Balance Co., Dept. CP, Clifton, N. J. . . . or for more information check CP 9881 on handy form, pages 2 and 3.

Control single and double acting cylinders in fluid, pneumatic circuits . . .

cam and foot operated valves use identical size housing for all models in same pipe size

Uses: Especially designed for the control of single and double acting cylinders in pneumatic and fluid circuits. The series includes a foot operated model which permits close-to-the floor operation, and so suggests a variety of applications not practical with previous models.

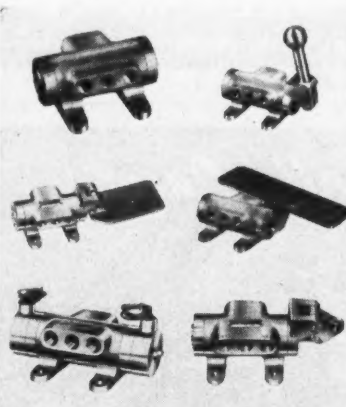
Features: The CV series valves include a cam operated model in addition to the foot controlled unit. The valve piston of the valves is fully balanced, eliminating handle load from pressure. The design permits transmission of full line volume and pressure through valve — operation of which is unaffected by normal line pressure variations.

An available detent arrangement provides for positive location of neutral and on and off position.

Identical housing assembly for all models in the same pipe size permits hand, foot, cam, electricity or pressure pilot operation and, in most instances, conversion from one to the other without breaking line connections or dismounting valve. Automatic and semi-automatic sequences may be secured with either spring or pressure pilot actuation.

Description: The series is presently available in $\frac{3}{8}$ inch and $\frac{1}{2}$ inch 18-port sizes. Light weight plus high tensile strength is secured by the use of sand cast, heat treated, aluminum alloy body material. "O" ring packing furnishes seal and eliminates all metal to metal contact. Seals may be replaced without removing valve from piping.

Source: Modernair Corp., Dept. CP, 4222 Hollis St., Oakland 8, Cal. . . . or for more information check CP 9882 on handy form, pages 2 and 3.



Cam and foot operated valves feature light weight, high tensile strength



for paint

or potato chips

process men value-



DOWTHERM

THE HEAT TRANSFER MEDIUM
FOR HIGH TEMPERATURES

for safety of operation

Yes, in addition to its economy, simplicity, and efficiency, Dowtherm is safer!

The use of Dowtherm permits the use of a system in which the fire is removed from any flammable material in process. Because of its high flash point, Dowtherm is not generally classified as flammable. Accordingly, it presents little hazard in handling in shipping and storage.

Today Dowtherm users, whether they be paint manufacturers or food processors—or engaged in any other high-temperature operation—enjoy a security unknown in earlier systems. If your operations require precise heating in the 300° - 700° F. range, write to Dow for complete information about Dowtherm.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Cleveland
Detroit • Chicago • St. Louis • Houston • San Francisco
Los Angeles • Seattle
Dow Chemical of Canada, Limited, Toronto, Canada



DOWTHERM



CHEMICALS INDISPENSABLE
TO INDUSTRY AND AGRICULTURE

When inquiring check CP 9883 on handy form, pgs. 2-3

STOPS RUST!

THE BEST CHEMICAL ANSWER
TO RUSTED AND WET METAL

RUST-O-PRIMER
VINYL WET RUST PRIMER



Rust-O-Primer etches the surface and primes in one operation. It can be applied right over damp or rust-pitted metal. Is an excellent primer for Vinyl Coatings such as Acid Causticbond Vinyl Maintenance Coating, or Acid Causticbond Vinyl Tank Lining. Also takes other paints or lacquers. Sprays, brushes, or dips.

Acid Causticbond comes in White, Black, Mist Gray, Red, Dark Gray, or Aluminum.

Rust-O-Primer and Acid Causticbond Vinyl Coatings are designed for Structural Steel; Outside and Inside of Tanks; Machinery; Galvanized Roofs or Buildings. Always insist on the Wilbur and Williams 1-2 treatment of rust.

Rust-O-Primer is the quick, sure way to thoroughly inhibit rust in industrial plants. It knocks out rust permanently. A good primer for galvanized or aluminum surfaces, too.



FIRST IN
FULL RUBBER BASE
PAINT
FIRST IN
RUST INHIBITIVE
PAINT.

Specialists in unusual coatings for over 20 years.
For a better, sure answer to your maintenance problems, write us today.

THE WILBUR & WILLIAMS CO.

Greenleaf and Leon Sts., Dept. C56, Boston 16, Mass.

When inquiring check CP 9884 on handy form, pgs. 2-3

Here's a Packing that's Really Inert



"JOHN CRANE" CHEMLON FOR ALL CHEMICAL SERVICES

"Chemlon packing on reciprocating and rotary pumps with 50% concentrated H_2SO_4 has been very effective for the past ten months"—"Ten times more efficient than any previous packing for viscous di-acetone dope."

These reports on the revolutionary new "John Crane" chemically inert packing are typical. Engineers are finding

that Chemlon lasts longer on all chemical services. Why don't you pack a pump or small valve and see its efficient performance for yourself?

There's an interesting new free booklet available—describing Chemlon in detail.

WRITE FOR YOUR COPY.

CRANE PACKING COMPANY

1821 CUYLER AVENUE

CHICAGO 13, ILLINOIS

When inquiring check CP 9885 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

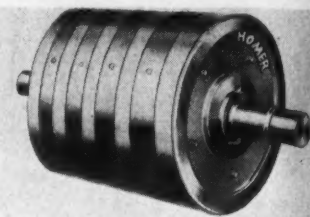
**Material can't pile up on edges
of magnetic pulley . . .**

head plates of 'non-electric' unit are cast aluminum; metal particles not attracted to bearings

Uses: Used as either head-end or idler pulleys in belt conveyor systems, these pulleys remove tramp iron from material being transported.

Features: Head plates are cast aluminum, eliminating pile-up of magnetic material on outer edges of pulley. Design does not permit loss of magnetic flux to shaft to attract injurious metal particles to bearing areas.

Description: Permanent magnetic pulleys are furnished in 57 standard sizes — in diameters of 12, 15, 18, 20, 24 and 30" and belt widths ranging from 4" to 60". They are crowned to prevent belt-weaving and runout and to assist in equalizing conveyed material as it passes over pulley.



Standard or special length shafts are available to fit new or existing applications, without changing bearings or shaft mountings.

Power-Plus permanent magnetic pulleys require no outside power source, of course. They are not affected by humidity or temperature changes, and are readily adapted to outdoor or indoor installations.

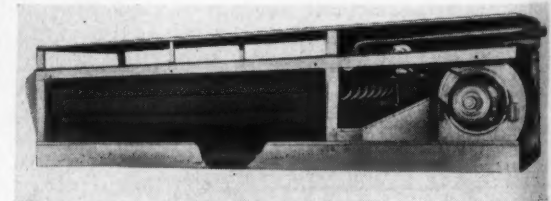
Source: Produced by The Homer Manufacturing Co., Inc., Dept. 100, Dept. CP, Lima, Ohio. . . or for more information check CP 9886 on handy form, pages 2 and 3.

**Faster cooling and chilling
slash refrigeration and
handling costs . . .**

various models of finned-tube space coolers save overhead space, prevent dripping ceilings

Uses: For processing, chill rooms and storage of perishables.

Features: Faster cooling and chilling time. Reduced spoilage. Elimination of bacteria, mold and odors. Reduced refrigeration and handling costs due to uniform



Fast-chilling, fast-cooling space cooler controlled temperature and circulation of air. Keeps air moist. Avoids dripping ceilings and messy drip pans. Conserves ceiling space.

Side panel, held in place by 4 thumb screws, is quickly removed or replaced. Engineering service aids potential users.

Description: Ample-size blower and special "air-turn" guides air through spiral fin coils and forces it into all

CHEMICAL PROCESSING Preview

PROCESSING EQUIPMENT

corners of room. Structure is galvanized steel angles, with body of heavy-gauge galvanized sheet steel. Enclosed motor is resilient-mounted. Body and blower in stainless steel if desired. Unit is furnished in various models to meet varying conditions.

Source: "Coldjet" is made by Industrial Manufacturing & Engineering Company, Dept. CP, 3845 N. Ravenswood Ave., Chicago 13, Ill. . . or for more information check CP 9887 on handy form, pages 2 and 3.

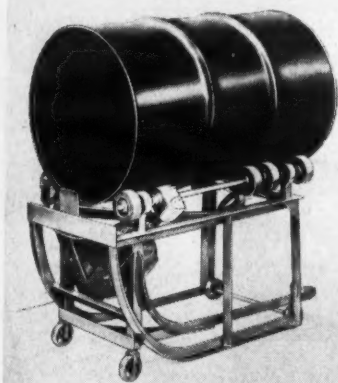
Mix, blend, tumble or clean with portable motorized drum-rotating truck . . .

handles range of containers from one gallon cans to 55 gallon drums

Uses: For low-cost mixing and agitating of liquids, powders and various compounds in from one gallon round cans up to 55 gallon drums. Now in use in plants in chemical, paint, rubber and adhesive fields. Other uses include tumbling small parts in cleansing mixtures or lacquers, and for the thorough cleaning of inside of used drums and other cylindrical containers.

Features: Furnished ready for service when plugged into ordinary outlet. Powerful, completely sealed gear

box (floating type) operating from motor through a flexible coupling, has radiating fins for dissipating any heat build-up due to torque load on the fully enclosed gears. The Rotator efficiently and safely rotates a full drum load up to 500 pounds. Special idler rollers in several lengths with adjustable collars are furnished to rotate various sizes of



Portable drum rotator

cylindrical containers from one gallon up.

Description: Truck has an all-welded steel frame. By means of a tipping lever, one man easily handles 500 pound loads in placing and removing drums on the Rotator. A 1/2 hp motor (enclosed type) is mounted in balanced position under the truck frame. It furnishes adequate power to drive mechanism through a small, ingenious, floating type gear box. Swivel casters at front are easily retracted by means of a foot lever located at the rear end of the truck to prevent slipping of the truck in loading.

Fast, complete drainage of drum contents is made from either back or bottom.

The drive rotating mechanism consists of a steel shaft (revolving in self-aligning sealed ball bearings) on which are mounted neoprene tread drive wheels. Specially designed rubber shock mounts, working in connection with roller bearing idler wheels, throw weight of drum load against drive wheels to stabilize load and absorb excess vibration.

Source: Rotator is built by Mores Mfg. Co., Inc., Dept. CP, Syracuse, N. Y. . . or for more information check CP 9888 on handy form, pages 2 and 3.



AS NEAR AS YOUR TELEPHONE

A new V-Belt service by Dayton, to save you time and money three ways:

1. "Drive Proved" V-Belts—the right belt for your particular drive. For Dayton has made more than 100 million V-Belts. They have been "Drive Proved" in every kind of industry, under every possible operating condition of heat, cold, dirt, dust and oil. They have proved their ability to save space; provide positive power; start and stop smoothly; run quietly, without vibration and last longer than any ordinary belt.

2. As Near as Your Telephone. There is a Dayton V-Belt Distributor near you. He is equipped with the specialized knowledge to recommend the right drive for you. You'll find him listed in the classified section of your telephone directory or his representative is now calling at your plant.

3. Instant Maintenance Service from Local Stocks. Your Dayton Distributor maintains complete stocks of Dayton "Drive Proved" V-Belts and

pulleys. He is prepared to give you instant service for existing or future drives, and to provide you with an immediate source of mill supplies.

Put this new service to work in your plant now. Equip your drives with Dayton "Drive Proved" V-Belts and be sure you are getting the maximum in drive performance and service. Call your Dayton V-Belt Distributor today. The Dayton Rubber Company, Dayton, Ohio.

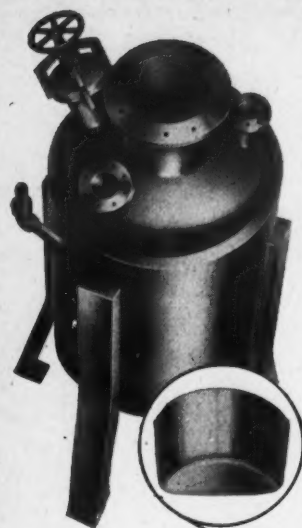
ONLY Dayton V-Belts are "DRIVE PROVED" for the Job!

Dayton Thorobred—for normal and heavy duty drives.
Dayton FHP—for small machines and appliances.
Dayton Cog—for shortest centers, smallest pulleys.
Dayton Steel Cable—for extreme loads and speeds.

ALL STOCKED BY YOUR LOCAL DAYTON V-BELT DISTRIBUTOR

Dayton Rubber

When inquiring check CP 9889 on handy form, pgs. 2-3



faster cleaning

For
STAINLESS STEEL
EQUIPMENT

If quick cleaning is one of the factors that determines your use of stainless steel processing equipment, remember this:

A STAINLESS STEEL VESSEL WITH ROUND CORNERS CLEANS FASTER—MORE THOROUGHLY—THAN ONE WITH SQUARE CORNERS. Whether you clean with brush or cloth—you can "get at" all the surfaces of a round-cornered vessel easily. There are no corners in which residue can hide.

Having worked exclusively with stainless steel and alloys for many years, we have developed to a high degree the techniques needed to fabricate processing equipment with round corners.

Using tools and dies of our own design, we build your vessels so that cleaning time in your plant is cut to a minimum. Result: your stainless steel equipment costs less to operate and lasts longer. Consult with us.

S. Blickman, Inc., 704 Gregory Ave., Weehawken, N. J.

S. BLICKMAN, INC.
Guards Alloys in Fabrication

SEND FOR THIS
VALUABLE BOOK
A request on your letter-
head will bring our
guide, "What to Look
for When You Specify
Stainless Steel for Your
Processing Equipment."



CORROSION RESISTANT PROCESSING EQUIPMENT



When inquiring check CP 9890 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

**Insulate breechings, hot ducts
up to 1200°F with less risk
of shutdowns, rebuilds . . .**

bars, bolts, and troweled-on refractory surfaces combine to support mineral wool blocks

Uses: Liner for hot ducts, all types of flues, breechings, etc., up to 1200°F. and regardless of surface contour. Protects steel.

Features: Adaptable to flat, round or conical surfaces merely by cutting insulation to fit and spacing castings to suit. Can be applied in the field without outside engineering assistance.

Provides practical answer to costly maintenance problems, since insulation is effectively protected and supported, manufacturer points out, thus avoiding shutdowns and rebuilds. Insulation securely affixed to steel shell, with some installations said to be now in use as long as 5 yrs.

Description: Consists of block insulation supported by a system of bars held in place by bolts welded to steel shell. Insulation is then covered with an Insuliner cement which protects insulation and resists "a reasonable amount of abrasion."

Block insulation is mineral wool layer construction, with fibers at right angles to heat movement, and is usually applied 2" thick. Castings are 21" long with a center-hole, and with lugs 4-1/2" from each end. Break-off notches 3" from each end permit closer centers where needed. Refractory surface handles like cement, and is applied by trowel.

Instructions for estimating are included in a bulletin.

Source: A development of M. H. Detrick Company, Dept. CP, 111 W. Washington St., Chicago 2, Ill. . . or for more information check CP 9891 on handy form, pages 2 and 3.

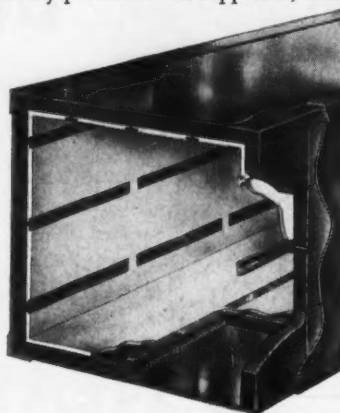
**Fast, sensitive measurement
of thermal radiation . . .**

spectral range of thermocouple is 0.3 to 25 microns; activated carbon trap absorbs any gas in case

Uses: Thermocouple is particularly suitable for thermal radiation measurements, employing chopped or modulated radiation at frequencies up to 10 cycles/sec.

Features: DC sensitivity of greater than 6 volts/watt is obtained for time constant of approximately 35 milliseconds.

Description: Hornig-O'Keefe type thermocouple has active target surface of 3/4 mm square. Spectral range, with KBr window, 0.3 to 25 microns. Resistance is between 6 and 10 ohms. Dimensions of the case have been chosen to subtend about 10% of the area of a 60-mm dia. spherical mirror when housed thermocouple is placed at its focus.



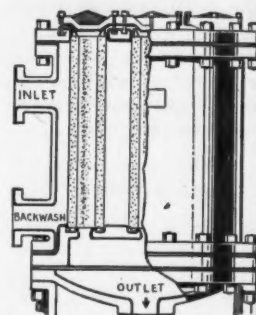
Interior of duct, with cut-away
view of liner construction

ADAMS PORO STONE FILTERS

**for High-Degree Crystal-Clear
Filtering of Corrosive Chemicals
CFR (Rubber-lined) CFL (Lead-lined)**

Adams Filters are completely enclosed for safety—yet installation is simple and tubes may be inspected or removed without dismantling the filter. All parts in contact with the acid are inert to its action.

Filter tubes are easily and speedily cleaned by backwashing, and may be repeatedly cleaned and used. There is full reclamation of the filtered acid.



Descriptive Circular 303 gladly mailed. A test in your plant of Poro-stone tubes operating under your actual conditions can be arranged on request.

R. P. ADAMS CO. INC. 243 E. PARK DRIVE
BUFFALO 17, N. Y.

When inquiring check CP 9892 on handy form, pgs. 2-3

**Here is the pair
for clean, dry
air . . .**

**JOHNSON
AFTERCOOLER**

Used where moisture is vaporized by the heat of compression. Circulates cooling water around the line, condenses the oil and water vapor so Separator can remove them. Simple in design, highly efficient in performance.

SIZES
FOR ALL
NEEDS

**JOHNSON
SEPARATOR**

Removes more than 99% of all water, dirt and oil from compressed air or steam. Combines the two best principles of separation—first allows air to expand slightly, then changes flow direction with the "Thousand Baffles". The newest idea in separator design, with self-draining trap mechanism built right in.

WRITE FOR
BULLETIN



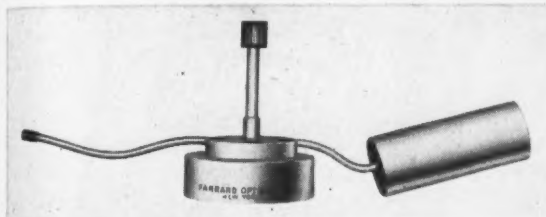
The Johnson Corporation

826 Wood St., Three Rivers, Michigan

When inquiring check CP 9893 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

Case is provided with activated charcoal trap that absorbs gas which may leak into or be released from interior walls. Available in following forms: compensated or uncompensated; mounted or unmounted; evacuated and with charcoal trap.



Fast and sensitive thermocouple

Source: Made by Farrand Optical Company, Inc., Dept. CP, 4401 Bronx Blvd., New York 66, N. Y. . . . or for more information check CP 9894 on handy form, pages 2 and 3.

All controls, protection included in gas-boiler burners . . .

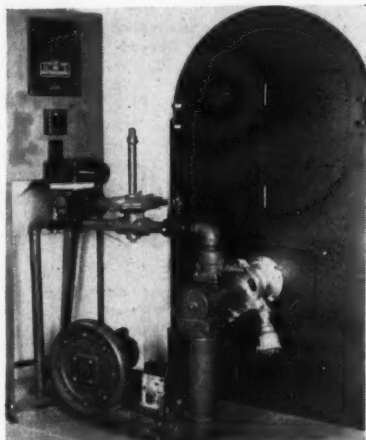
automatic assemblies ready to use after making gas and electrical connections; fit available space

Uses: Burn gas when firing 10-180-hp boilers. Suitable for manufactured and mixed gas, or for natural and LP gas. For use as original equipment or for replacing or supplementing oil or coal operation.

Features: Packaged units come complete with protective equipment and safety controls, and require only gas piping and electrical wiring. Square flange connections throughout make possible a flexible arrangement of elements to suit installation space available.

Description:

Principle element of this automatic burner assembly is the Pow-R-Semby which includes a constant-pressure blower; single or double burner nozzles, each with compact proportional mixer; zero regulator; motorized air valve; electric ignition pilot; and manual reset safety gas valve. Steam pressure controls or remote thermostatic control, or both, are provided in the packaged unit.



Packaged burner assembly for gas-fired boilers

Burners operate automatically over 3 steps of heat output. For light loads, the pilot operates, while the main burner automatically takes over at "low fire" or "full fire" as required.

Source: Series "BB" boiler burners are manufactured by Bryant Industrial Division (Affiliated Gas Equipment, Inc.), Dept. CP, 1020 London Road, Cleveland 10, Ohio . . . or for more information check CP 9895 on handy form, pages 2 and 3.

SCORE A 6-POINT WIN

in the production game . . .

DISTILLATION

VS

DEMINERALIZATION

1 Expensive to operate and maintain

Costs are 10% to 98% less!

2 Require a heat source

Operate at room temperature!

3 Must be dismantled to descale

No scale formation!

4 Quality control equipment an "extra"

Accurate, precise controller built in!

5 "Boiling out" may cause week's delay

Ready for immediate operation!

6 Limited in capacity

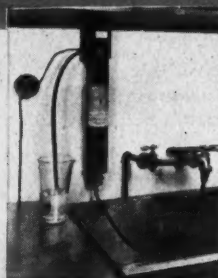
Units available in any capacity!



ANY SIZE YOU WANT

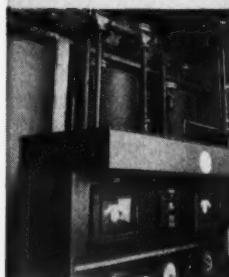
Models as small as 3 gph . . . as big as 1,000 gph, with various sizes in between . . . are in stock, available immediately.

Specially-built designs, too . . . in any size. (See below.)



THIS UNIT SCORED 94% COST REDUCTION

Specially built for a plant which formerly used distilled water, delivers water of less than 4 ppm. of ionized solids at the rate of 160,000 gallons daily! Paid for itself in savings in a few months.



...with a FILT-R-STIL* Water Demineralizer

YOU'RE BOUND TO SCORE SIZABLE ECONOMIES when you install a FILT-R-STIL demineralizing unit to replace cumbersome and costly old-time distillation methods. For the FILT-R-STIL Demineralizer is setting records every day . . . in drastically lowered costs for mineral-free production water . . . in the efficiency of its operation . . . and in the high quality (a maximum of 1 to 10 parts of ionized solids per million parts of water) of the water it delivers.

So, if you're economy-minded . . .

GET ON THE FILT-R-STIL TEAM. A FILT-R-STIL Demineralizer may pay for itself in a matter of months. Then it will pay you—in added profits—for years to come.

For details, send in the coupon. For immediate action, i.e., estimates of costs and performance data, just send us a water analysis (or a gallon sample), and tell us how much water you wish to treat, at what rate of speed.

*Reg. U. S. Pat. Off.

AMERICAN Cyanamid COMPANY

ION EXCHANGE PRODUCTS DEPARTMENT

30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

- ☐ Send me your new 26-page booklet, "FILT-R-STIL Demineralizers."
- ☐ Send me data on your low-cost method for producing silica-free water for high-pressure boilers.
- ☐ Send me a description of your new film on water demineralization by ion exchange.

Name _____

Company _____

Address _____

City _____ State _____ C4

When inquiring check CP 9896 on handy form, pgs. 2-3

ECONOMICAL



PRESSURE or VACUUM

THE CENCO-PRESSOVAC PUMP is ideal for backing up liquid or mercury diffusion pumps in low pressure systems. May be used to circulate or collect gasses . . . or to conduct fumes from distillations to vents. It has large free air displacement . . . 34 liters per minute. Guaranteed to attain 25 microns pressure. When compressed air is required, this pump will satisfy the need . . . 10 lbs. per square inch, maximum. Designed for trouble-free operation and long service.

No. 90510A Cenco-Pressovac Pump for 115 volts, 60 cycle, AC.

Price, each \$75.00

Models are available for other voltages, frequencies, and direct current.

Write Dept. B.C. for Engineering Bulletin 10.

CENTRAL SCIENTIFIC COMPANY
Scientific (INC) Properties
1700 IRVING PARK ROAD, CHICAGO 11
NEW YORK BOSTON CINCINNATI DENVER LOS ANGELES PHOENIX MINNEAPOLIS

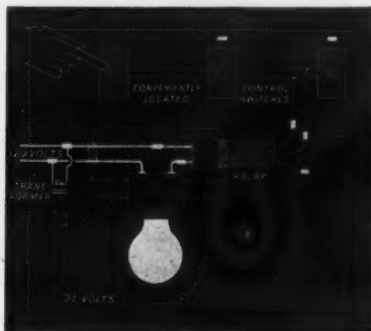
When inquiring check CP 9897 on handy form, pgs. 2-3

Page 116

PROCESSING EQUIPMENT

Controls relays individually or in groups from any of several points . . .

low voltage remote control system flexible, economical; increases safety



Remote control system

Uses: Remote control of control elements.

Features: System can be set up to control individual relays from any of several conveniently located switches. If desired, master switches to control any number of switches simultaneously can be incorporated into system.

Description: Step-down transformer supplies 24 volts to control system. Any number of switches in parallel can be installed to control any relay. Hand or motor-operated master switches can be utilized to control any desired grouping of relays simultaneously.

Source: Developed by Square D Co., Dept. CP, 6060 Rivard St., Detroit 11, Michigan. . . or for more information check CP 9898 on handy form, pages 2 and 3.

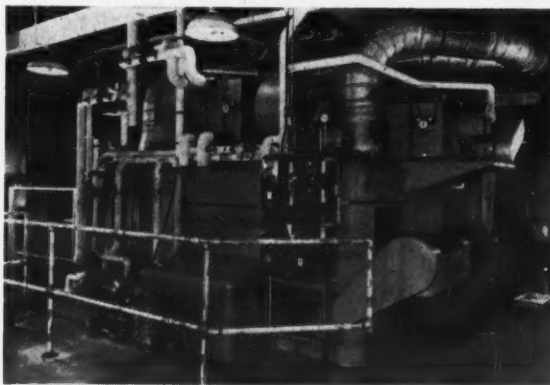
Clean tote boxes as well as parts in drum and belt washing machine . . .

eliminates disadvantage of putting washed parts back into dirty tote boxes

Uses: The machine illustrated is designed for cleaning miscellaneous parts as well as tote boxes used to carry parts. Now in use by Frigidaire Div. General Motors Corp., Eastman Kodak, General Electric and Thompson Products.

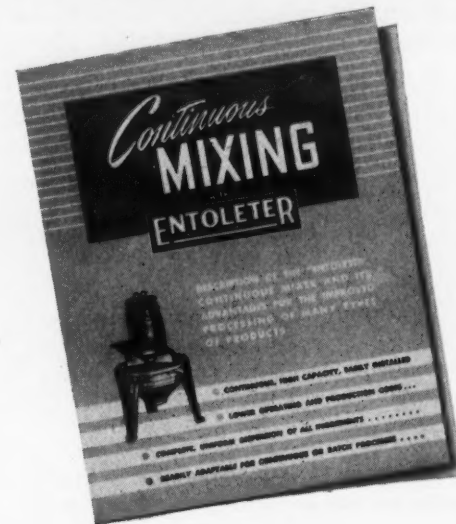
Features: Extras can be provided for this machine so that parts and tote boxes can return to the loading point to permit one man operation.

Description: In this compact and automatic machine, parts are dumped onto the hopper or loaded onto the belt, cleaned and discharged at the opposite end. Tote boxes are



Drum and belt washing machine cleans parts and also tote boxes

New Mixer for IMPROVED PROCESSING



Lower Operating & Production Costs . . . Complete Uniform Dispersion of Ingredients . . . Continuous or Batch Process. Bulletin on request. ENTOLETER DIVISION, The Safety Car Heating & Lighting Co., Inc., 1183 Dixwell Ave., New Haven 4, Conn.

When inquiring check CP 9899 on handy form, pgs. 2-3

PRECISION —

as well as finest alloy steel. account for the unequalled Strength, Durability, Dependability and economy of

DIX UNIVERSAL JOINTS

14 sizes, bores 3/16" to 2"; overall length 1 3/4" to 10 1/2".

Widest distribution and longest, severest service attest their unmatched quality. Exceed even rigid requirements of Army, Navy and Air Corps specifications.

- Concentricity: Guaranteed within .0005.
- Grinding: To infinite degree of accuracy. No binding, backlash or inlay of pins.
- Flush Rivets: Ground flush with body for close quarters. No extra cost.

- Greater Angle of Operation: No loss of strength. Max. bearing surface.
- Alloy Steel: Highest grade for max. strength, min. weight.
- Heat treated.

Write for fully descriptive literature.
Mfd. by

LOVEJOY FLEXIBLE COUPLING CO.

Also Lovejoy Flexible Couplings and Variable Speed Transmissions.

5072 W. Lake St.

Chicago 44, Ill.

When inquiring check CP 9900 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

PROCESSING EQUIPMENT

turned upside down and washed on the belt and discharged at the same end as are the parts.

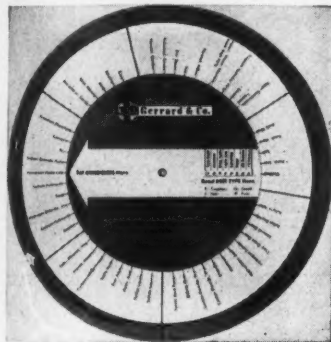
Source: Cincinnati Cleaning & Machinery Co., Dept. CP, Hecla St., Ironton, Ohio . . . or for more information check CP 9901 on handy form, pages 2 and 3.

"Dial the arrow" to select proper metal strapping for corrosive conditions . . .

handy selector covers 7 metals, all corrosive conditions; reverse side selects length, weight

Uses: For instant, accurate selection of the proper metal strapping to resist corrosion despite exposure to any specified type of atmospheric, soil, water, gas fume or chemical condition.

Automatically reveals which of manufacturer's 7 varieties of metal strapping will give best service under the specified condition, and which types will give fair or indifferent service.



Dial-selector selects proper metal strap for corrosive conditions

Opposite side of selector is a calculator to determine, with slide rule precision, the length and weight of steel or aluminum strapping required for any given binding operation.

Features: Speedy and positive, eliminating guesswork. Covers practically every type of service condition to which metal strapping is exposed.

Description: User simply dials arrow so that arrow-head points to type of condition. Proper metal strapping is indicated in a "window" in base of arrow.

Source: Available on request from A. J. Gerrard & Co., Dept. CP, 1950 N. Hawthorne Ave., Melrose Park, Ill. . . or for more information check CP 9902 on handy form, pages 2 and 3.

Reduces fatigue at drawing board . . .

draftsman's chair fully adjustable without using tools

Uses: Draftsman's chair.

Features: Completely adjustable without tools. Reduces fatigue.

Description: Seat height adjusts from 23½ to 32½". Simple handwheel adjusts depth of seat, while a similar device adjusts height of back.

Footrest is independently adjustable to match seat-height adjustment. A forward-tilting mechanism adjusts for degree of tilt and weight of user. As draftsman leans forward to work on upper part of drawing board, this device permits seat and back to follow his motions.

Some models are provided with casters which, because of span of chair legs, can be used without danger of overturning chair, thus allowing draftsman to roll freely from one end of drawing board to the other.

Source: Cramer Posture Chair Company, Inc., 1205 Charlotte St., Dept. CP, Kansas City 6, Mo. . . or for more information check CP 9903 on handy form, pages 2 and 3.

B&W can supply you . . .

SEAMLESS or
WELDED

Stainless Steel Tubing

in

different analyses

...for your corrosive and high temperature services. Write for TDC 122 which contains the composition of all these grades.

BABCOCK & WILCOX
SEAMLESS & WELDED TUBES

THE BABCOCK & WILCOX TUBE COMPANY
General Offices: Beaver Falls, Pa.
Plants: Beaver Falls, Pa. and Alliance, Ohio

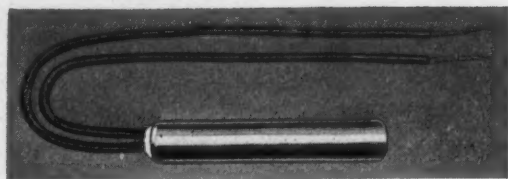
Seamless and Welded Tubular Products in a full range of Carbon, Alloy, and Stainless Steels for All Pressure and Mechanical Applications

302
302B
304
308
309S
309Scb
310
316
316Cb
317
321
347
405
410
414
420
430
440C
446

STAINLESS STEEL
INDUSTRY
EXHIBIT
101
PARK
AVENUE
NEW YORK

When inquiring check CP 9904 on handy form, pgs. 2-3

A New and Better CARTRIDGE HEATER



Developed by Trent engineers to provide the first real improvement in cartridge heater design or construction — Trent or any other — in nearly twenty years.

- 1—New multiple-pass core permits use of more resistance wire—lower wattage per square inch—longer heater life.
- 2—New-style pigtailed of nickel-clad copper stranded wire with silicon impregnated glass sleeving—improved heat and moisture resistance—extremely flexible.
- 3—New unbreakable cement pot replaces old-style porcelain—withstanding 85% humidity.
- 4—End opposite terminals—silver soldered at no additional charge.

Sizes: $\frac{3}{8}$ " to 1-5/16" Diam., 1/2" to 24" long.
Watts: 30 to 2,000.

Your Molding Equipment will operate more efficiently with these trouble-free, longer-lasting heaters. Send for Bulletin 60-T for complete information.

TRENT INC.
Electrically Heated Industrial Equipment
235 LEVERINGTON AVE. PHILA 27 PA.

When inquiring check CP 9905 on handy form, pgs. 2-3

International

BALL MILLS

RIBBON MIXERS
BELT OR MOTOR DRIVEN

PORTABLE MIXERS
MEDIUM and HEAVY DUTY
Modern Design and many different types, Direct Drive, Gear Motor, Slow Speed.

PERMANENT MIXERS
With or without Tanks—Top or Side Entrance—Stirrers of the propeller or turbine type.

Send for New Catalogs Now Ready

INTERNATIONAL ENGINEERING, INC.
NEW YORK 15 Park Row
DAYTON 1, OHIO
CHICAGO 407 S. Dearborn St.
LOS ANGELES 130 N. Norton Ave.—Farnham Mch. Co.

When inquiring check CP 9906 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

Eliminate festooning of cable with jacket of neoprene . . .

cable is $\frac{1}{4}$ " smaller in overall dia. than braided type

Uses: For carrying electricity from main power lines to industrial buildings.

Features: Because of a natural rubber insulation around conductors, and an outside jacket made of neoprene, the jacket is said to wear several times longer than braided types. The neoprene jacket will eliminate festooning, the separation of the outside braid from the cable. The neoprene jacket gives the cable unusually high resistance to rain, ice and sleet, deterioration by sunlight, and it is fire retardant.

Description: The cable is approximately one-quarter inch smaller in diameter than braided types, which means a smaller ice and wind load. It weighs the same, however. The cable is being produced in 3 following sizes: three No. 6 conductors, two No. 6 conductors and one No. 8 conductor, three No. 8 conductors. Approved by Underwriters Laboratories as type "S. E."

Source: United States Rubber Co., Dept. CP, Rockefeller Center, New York 20, N. Y. . . . or for more information check CP 9907 on handy form, pages 2 and 3.

Control process plant air with straightway or 3-way type valves . . .

can be remotely controlled and set up in series, if desired



Air control valve

Description: Available in straightway and three-way models both of which are remotely controlled and can, of course, be set up in series.

Source: This valve for safe air control in fire areas is made by Ross Operating Valve Co., Dept. CP, 120 Golden Gate Ave., Detroit, Mich. . . . or for more information check CP 9908 on handy form, pages 2 and 3.

High electrical capacity, high inrush capacity combined in switch . . .

steady current rating 20 amps; inrush capacity amps at voltages up to 460 v., a-c

Uses: Especially designed for severe service in industrial use.

Features: Combines high electrical rating with high

Uses: For safe control of air power in chemical processing plants, coal mines, powder factories and in oil well applications or where electricity is prohibited.

Features: Valve is generally actuated by a pilot valve which can be hand, foot or cam operated. Eliminates need for safeguarding against electrical hazards.

it's ARCOS AGAIN!

**IN WELDING LOW-ALLOY
HIGH TENSILE STEELS**



ARCOS low alloy high tensile steel electrodes were again used to weld this 45 cubic yard dipper when Marion Steam Shovel Company along with the Hanna Coal Company undertook to make this new world's largest shovel. ARCOS ability to provide the electrodes and to meet the problems involved in welding the low alloy high tensile steels has helped fabricators on many a difficult high tensile job.

4 ARCOS LOW HYDROGEN ELECTRODES

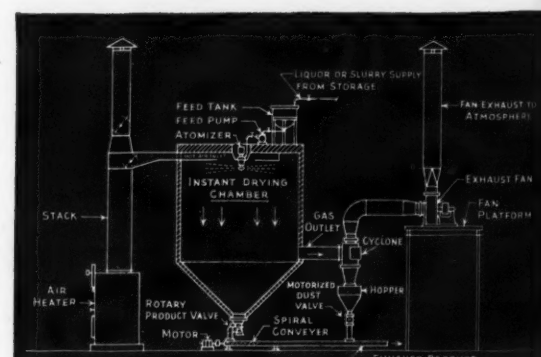
- * Require no preheat on many jobs.
- * Have high impact values.
- * Give complete range of tensile properties with high ductility.

| | Yield Strength, psi | Tensile Strength, psi | Elongation in 2" | Reduction in Area |
|--------------|---------------------|-----------------------|------------------|-------------------|
| Manganese 1M | 70-85,000 | 90-100,000 | 20-30% | 40-70% |
| Manganese 2M | 85-105,000 | 100-125,000 | 10-20 | 15-20 |
| Nickel 1 | 82-89,000 | 70-80,000 | 25-30 | 50-60 |
| Nickel 2 | 65-75,000 | 80-90,000 | 20-30 | 45-60 |

ELECTRODES • COILED WIRE • BARE ROD



When inquiring check CP 9909 on handy form, pgs. 2-3



LOW COST DRYING with The "INSTANT DRYING" System

- Less power and a smaller connected load required.
- Large capacity, rugged construction.
- Requires a minimum of labor and attention (one man can supervise the operation of a battery of several Instant Drying units per shift).

Many of your industrial colleagues have proved the savings that can be secured through the use of THE INSTANT DRYING SYSTEM. Write to us on your drying problem. We shall answer your questions and send you detailed literature on THE INSTANT DRYING SYSTEM.

INSTANT DRYING CORPORATION

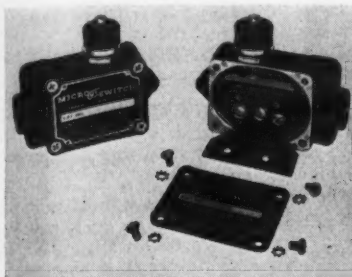
101 Park Avenue, New York 17, N.Y.

Testing and Research Laboratories at Poughkeepsie, N. Y.
Engineering by CLARK, MacMULLEN & RILEY, INC., New York

When inquiring check CP 9910 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

inrush capacity. In addition to many high capacity advantages, the newly designed die cast aluminum housing offers unusual protection to the enclosed switching element, sealing the switch from dust, dirt, moisture and the splash of oil and water. Improved wiring facilities and a tapped conduit hub are other features.



Double throw enclosed switch, in right and left hand types

AC; 1½ hp 230 v. AC; 20 amperes 125, 250 or 460 Volts AC; 10 amperes 125 volts AC, "L".

A sturdy overtravel mechanism is built into the housing to insure long life and accurate repeatability of operating point. For surface mounting, three holes are provided for ¼" screws through 17/32" of metal. Mounting bosses are also provided should it be desired to mount the switch on top, bottom or back surfaces. The switches are available in right hand or left hand designs.

Source: Severe service switches BAF1-2RN are made by Micro Switch, Dept. CP, Freeport, Ill., . . . or for more information check CP 9911 on handy form, pages 2 and 3.

300,000 Btu heater installs in limited floor space . . .

direct-fired unit proves 82-86% efficient on No. 3 or lighter oil or gas; fully automatic

Uses: Direct-fired unit heater for installation in limited areas without interference with operating area.

Useful as a dryer, or for circulating cool air from floor level to working level. Portability permits moving it to position and hooking it up in comparatively short time for use in connection with constructional work, similar operations.



300,000 Btu direct-fired unit heater

Features: Has efficiency of 82-86% on No. 3, or lighter, oil or gas. Heated air delivered directly to working area without excessive velocity. Economy of operation. Fully automatic, permitting independent operation and accurate adjustment to heating needs. A completely packaged unit — only flue, electrical and fuel connections required to put it in operation.

Description: Except for size and output, characteristics of Model 300 are exactly those of larger and older Model 555.

Source: A development of Prat-Daniel Corporation, Dept. CP, East Port Chester, Conn. . . . or for more information check CP 9912 on handy form, pages 2 and 3.

APRIL, 1949

Description:

The switching element is the new high capacity type "A" basic switch having a steady current rating of 20 amperes, and inrush capacity of 75 amperes at voltages up to 460 volts, AC. Underwriters' Laboratories list this switch for ¾ hp 115 volts

CUT PIPING COSTS

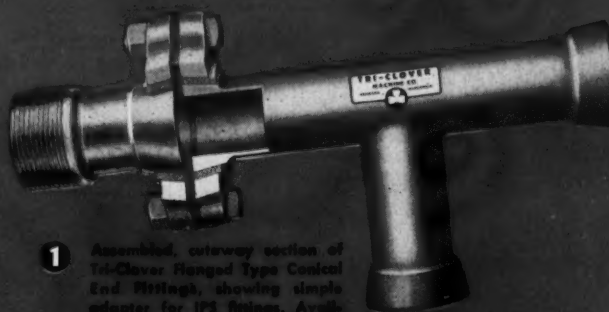
with
Tri-Clover
STAINLESS STEEL
tube O. D.
FITTINGS and
LINES



featuring . . .

- LOW FIRST COST
- LOW UPKEEP
- STREAMLINE CONSTRUCTION
- FULL CORROSION RESISTANCE
- EASY TO INSTALL
- POCKETLESS
- LEAK-TIGHT
- READILY ADAPTABLE TO OTHER FITTINGS

See your Tri-Clover Jobber for details, or write for catalogs covering any of these four basic fitting types.



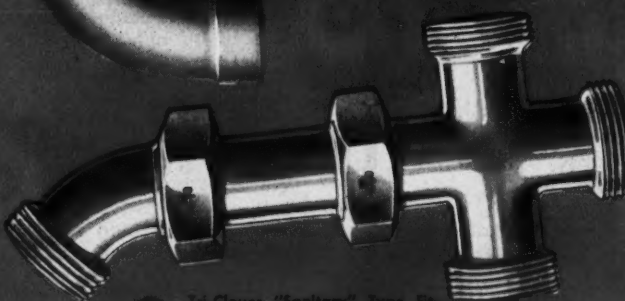
1 Assembled cutaway section of Tri-Clover Flanged Type Control End Fittings, showing simple adapter for IPS fittings. Available in a complete line, 1" thru 8" O. D. Send for new Catalog 948.



2 Typical welded fitting section, showing cross, cap, reducer, tubing section and IPS adapter from the complete line of Zephyrweld Welding Fittings. Available from ½" thru 24" O. D. Send for new Catalog 748.



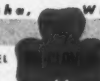
3 Tri-Clover Reduced End Fittings are quickly assembled by soldering, brazing or socket welding, to form low-cost conveying lines. Available in a complete line, ½" thru 18" O. D. Send for Catalog 948.



4 Tri-Clover "Sanitary" Type Fittings and Valves are available in a complete line of stainless steel and nickel alloy types, from 1" thru 4" O. D., to meet all sanitary code requirements.

Tri-Clover
MACHINE CO.
Kenosha, Wisconsin

TRI-ALLOY AND STAINLESS STEEL
SANITARY FITTINGS, VALVES,
PUMPS, TUBING, SPECIALTIES



FABRICATED STAINLESS STEEL
INDUSTRIAL FITTINGS AND
INDUSTRIAL PUMPS

THE Complete LINE

When inquiring check CP 9913 on handy form, pgs. 2-3



Kirk & Blum fabricates many types of sheet metal in a wide range of products and parts. All types of standard and specially-built metal working machinery are at your service in the Kirk & Blum shops.

Whether your sheet metal fabrication work is large or small . . . one unit or a thousand . . . or steel, galvanized, monel, inconel, aluminum, stainless steel or other materials up to 3/8", call on Kirk & Blum for expert work and delivery as promised. Write for new booklet "Sheet Metal Assemblies". The Kirk & Blum Mfg. Company, 2833 Spring Grove Ave., Cincinnati 25, Ohio.

KIRK & BLUM
Make Your Blueprints
Come To Life

When inquiring check CP 9914 on handy form, pgs. 2-3



Large Face Powder Hopper Tank.

Take advantage of Ceilcote's quarter century of experience

when buying corrosion proof construction.

We base each recommendation on the customer's individual operating conditions as related to our experience and constant laboratory research. When combined with our complete line of service-proven products in the steel, chemical and allied industries the result is maintenance-free service under the most vigorous acid, alkali and solvent conditions.

Write for further information. Representatives in most principal cities.

Ceilcote Products include Acid, & alkali-solvent proof

- Linings
- Bonding cements
- Brick
- Protective coatings

CEILCOTE **Corrosion Proof**
MATERIALS • CONSTRUCTION • SUPERVISION

The CEILCOTE Company ROCKEFELLER BUILDING • CLEVELAND 13, OHIO

When inquiring check CP 9915 on handy form, pgs. 2-3

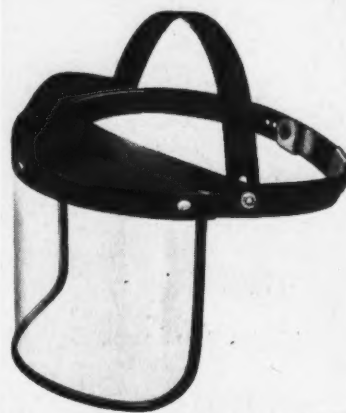
PROCESSING EQUIPMENT

Multi-purpose shield protects face for many uses . . .

user molds wire-reinforced visor to fit needs

Uses: Multi-purpose face shield for metal finishing or pouring; spot, gun and flash welding, wood working and similar operations.

Features: Wire reinforcement (see illustration) permits user to mold shield to his requirements. Economical.



Multi-purpose face shield

cally replaceable visor adjusts for proper distance from face.

Improved headgear is extruded plastic, fitted with sweatband and pivot assembly.

Description: 11"-wide visor is fire-repellent, flexible, clear Plastacelle in thicknesses of .020, .030 or .040"; and is available in light, medium or dark green in .020" thickness only. All, however, are available in 4, 6 or 8" depths.

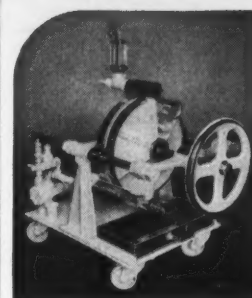
Visor is attached to outside of spark deflector to withstand greater impact.

Source: General Scientific Equipment Company, Dept. CP, 2700 W. Huntingdon St., Philadelphia 32, Pa. . . . or for more information check CP 9916 on handy form, pages 2 & 3.

Wire cloth woven of any metal, alloy

Typical applications of metallic filter cloth, wire cloth, and wire screen are pictured in 4-page, 2-color bulletin. Availability of wire cloth stock list and 80-page catalog are described.

Bul. 91, issued by The Cambridge Wire Cloth Co., Dept. CP, Cambridge, Md. When inquiring specify CP 9917 on handy form, pages 2 & 3.



ERTEL PORTABLE Small Capacity FILTER

equipped with a three gallons per minute pump.

★ Ertel Model EBW Filter, illustrated, is ideal for small capacity requirements. It will accommodate from two to six Ertel Asbestos Filter Disks which are sealed by a single handwheel which insures alignment.

The same Ertel rigid standards of quality are incorporated in

this EBW Model Filter as those associated with the full Ertel Liquid Handling Equipment line.

If you have a problem in filtration write the Ertel Engineering Department. Catalog No. 13 describes Ertel equipment in detail; write for a copy today.

ERTEL FREE LABORATORY SERVICE: Send a sample of your product to us for laboratory test. We will filter it and return for your inspection along with enough recognized Ertel Asbestos Filter Sheets to prove the superior results in your plant.

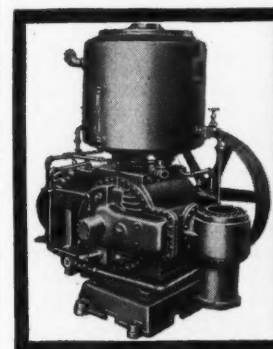
ERTEL ENGINEERING CORPORATION
KINGSTON NEW YORK

New York City Sales:

40 West 48th Street, N. Y. 19, N. Y.

ASBESTOS FILTER SHEETS • ASBESTOS SHEET FILTERS
CYLINDER TYPE DISC FILTERS • PYROGEN FILTERS
VACUUM BOTTLE FILTERS • PUMPS • MIXERS • CAPPERS

When inquiring check CP 9918 on handy form, pgs. 2-3



**HIGHER VACUUM
FASTER PUMP DOWN
BETTER EFFICIENCY
WITH
BEACH-RUSS
TYPE RP
HIGH VACUUM PUMPS**

Capacity — from 17 to 845 c.f.m.

Vacuum — within 10 microns absolute — blank flange.

For most vacuum processes — pump made of corrosion resistant metals.

Write for New Catalog No. 84

BEACH-RUSS CO., 46 CHURCH ST., NEW YORK 7, N. Y.

Here's the ideal pump for high vacuum processes in the production of chemicals, biologicals, foods, essential oils, penicillin, plastic, blood plasma, metals, etc., where better appearance, flavor and quality are wanted, and overheating, dusting or fumes must be avoided.

Positive rotary motion at only 200 R.P.M. without depending on gears, springs or centrifugal force; equipped with automatic lubrication. Gives high speed evacuation, high efficiency; practically noiseless; low power; compact, space saving.

When inquiring check CP 9919 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

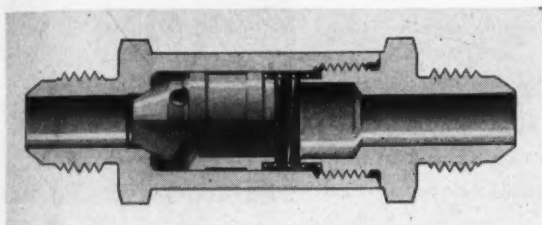
PROCESSING EQUIPMENT

High performance, long service under extreme conditions, identify check valve . . .

run cone-type units more than 150,000 impulse cycles without increased leakage

Uses: Cone check valves for pressures up to 1500 and 3000 psi in temperature range of minus 65°F to plus 160°F. Qualified under Army-Navy specifications requiring life tests of 50,000 cycles involving peak impulse pressures 150% of rating, after which leakage is less than 1 drop per hr.

Features: Sample valves are said to have been run more than 150,000 impulse cycles without increase in leakage. Open under 4-8 lbs directional pressure. Arrows stamped on valve body indicate direction of flow.



High-performance cone check valves

Chatter-free. Uniform low pressure drop over wide range of flow rates. Long service life.

Description: Furnished with anodized aluminum bodies and stainless steel poppets for pressures up to 1500 psi, and with cadmium-plated steel bodies and heat-treated steel poppets for 3000-psi service. Male or female ports are threaded in $\frac{1}{8}$ to $\frac{3}{4}$ " pipe size, or for tube sizes $\frac{1}{4}$ through 1" OD.

Tube connection-ends have 37° flare angle in conformance with tube fitting specifications of Joint Industry Conference on Hydraulic Standards for Industrial Equipment.

These valves are approved in aircraft types AN 6207 (1500 psi) and AN 6249 (3000 psi), with Army-Navy port connections in conformance with specification AND 10056; and also AN 6280 (3000 psi) with AND 10050 ports.

Source: The Parker Appliance Company, Dept. CP, 17325 Euclid Ave., Cleveland 12, O. . . or for more information check CP 9920 on handy form, pages 2 and 3.

Silicone rubber can be bonded to wide range of metals . . .

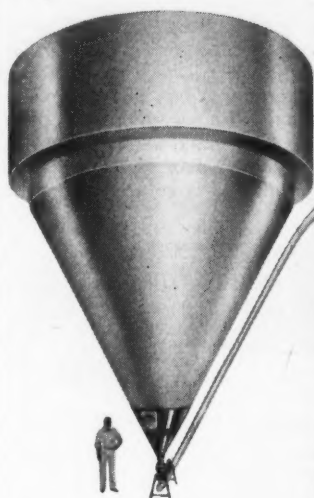
rubber withstands temperature extremes, compression under heat, weathering, etc.

Uses: Gaskets on commercial ovens and deep-freeze units, diaphragms to seal lubricants in high-speed or heavy-duty bearings, suspension parts on conveyors passing through ovens, etc.

Features: Rubber withstands extremes of temperature, resists permanent compression under heat, will not become brittle or crack after long exposure to air or ozone.

Description: Silicone rubber can now be bonded to wide range of metals, making possible gas-tight seals, non-creeping linings, etc. Rubber withstands temperatures from -160°F to more than 500°F.

Source: Developed by Stalwart Rubber Co., Dept. CP, 221 Northfield Rd., Bedford, Ohio . . . or for more information check CP 9921 on handy form, pages 2 and 3.



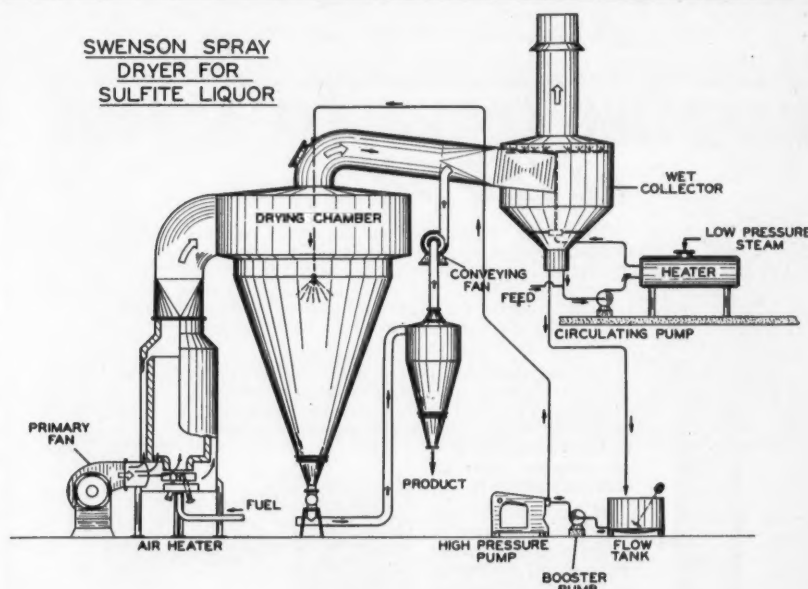
How SWENSON SPRAY DRYING

Reduces Process Delays

An important advantage of a Swenson Spray Dryer is its ability to minimize process holdup. Not only is the operation, itself, faster than other methods—30 seconds from liquid to solid—but, in many cases, no pre-concentration of dilute feed is required and the product leaves the system as a finished powder ready for packaging.

Thus the adoption of spray drying frequently eliminates the time and cost involved in other processing steps. Have you investigated the use of spray drying in your operations? Swenson has plant-scale experimental facilities available for your use.

SWENSON SPRAY DRYER FOR SULFITE LIQUOR



A similar flow sheet is applicable to nonedible starch hydrolysis products, tannin extract, and various inorganic salts.

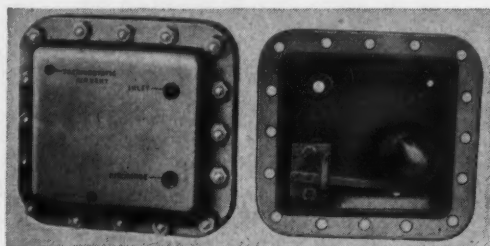
SWENSON EVAPORATOR CO. DIVISION OF WHITING CORPORATION

15667 Lathrop Avenue Harvey, Illinois
Eastern Sales Offices and Export Department: 30 Church Street, New York 7, N. Y.
In Canada: Whiting Corporation (Canada) Ltd., 47-49 Lupton Ave., Toronto 2

When inquiring check CP 9922 on handy form, pgs. 2-3

New Continuous Flow Trap

Instantly Removes Water, Oil and Dirt from Steam, Gas and Compressed Air Lines



Showing pipe connections on trap housing.

Showing simple working mechanism in housing.

ELIMINATES

- Steam and Heat Losses
- Air Binding and Freeze-Ups
- Hammer-Chatter
- Priming-Leakage
- Valve Seat Wear

This heavy duty, large capacity trap is ideal for pipe lines, storing or processing equipment which needs rapid, complete drainage of condensate or foreign matter. It provides maximum capacity where uniform temperature and pressure conditions are necessary. A pancake-shaped housing contains a simple slide valve and float mechanism which regulates flow of condensate or fluid according to its accumulation in the trap. Movement of the slide valve over the discharge orifice with the rising or lowering of the

float prevents short circuiting of vapor; its cutting action frees the orifice of foreign matter.

All pipe connections are on one side of the trap; removal of cover permits easy cleaning without breaking the line.

The Rockwell Trap is made in screwed and flanged types of cast steel or cast iron with stainless steel internal parts for 1/2", 3/4" and 1" pipe size, pressures to 300 p.s.i. and temperatures to 750° F. Write for Bulletin No. 600.

W. S. ROCKWELL COMPANY

220 ELIOT STREET • FAIRFIELD, CONN.

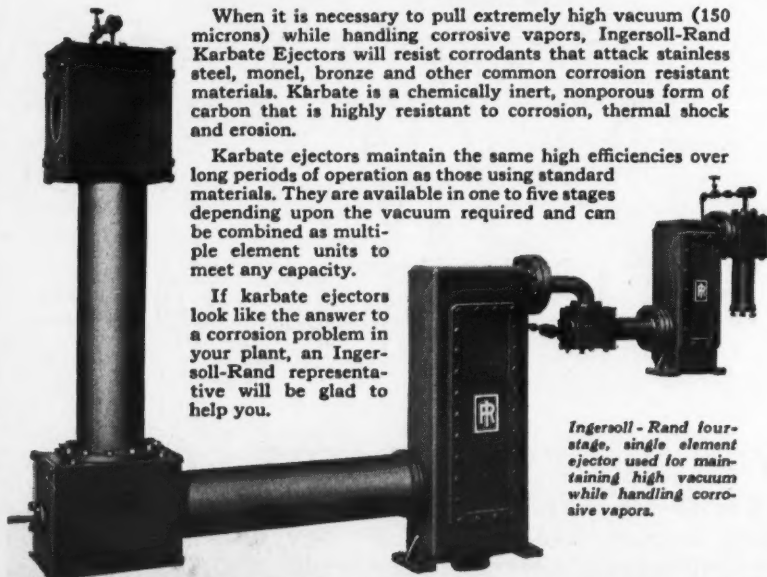
When inquiring check CP 9923 on handy form, pgs. 2-3

HANDLING CORROSIVE VAPORS at 150 Microns

When it is necessary to pull extremely high vacuum (150 microns) while handling corrosive vapors, Ingersoll-Rand Karbate Ejectors will resist corrodants that attack stainless steel, monel, bronze and other common corrosion resistant materials. Karbate is a chemically inert, nonporous form of carbon that is highly resistant to corrosion, thermal shock and erosion.

Karbate ejectors maintain the same high efficiencies over long periods of operation as those using standard materials. They are available in one to five stages depending upon the vacuum required and can be combined as multiple element units to meet any capacity.

If karbate ejectors look like the answer to a corrosion problem in your plant, an Ingersoll-Rand representative will be glad to help you.



Ingersoll-Rand four-stage, single element ejector used for maintaining high vacuum while handling corrosive vapors.

COMPRESSORS • AIR TOOLS • ROCK DRILLS
TURBO BLOWERS • CONDENSERS
CENTRIFUGAL PUMPS • OIL AND GAS ENGINES

Ingersoll-Rand
11 Broadway, New York 4, N. Y. 242-4

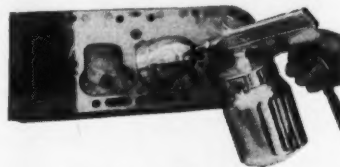
When inquiring check CP 9924 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

Blast or spray with gun that attaches to any air line . . .

used in cleaning, finishing or semi-finishing operations

Uses: For sandblast operations or spraying solvents and liquids. It improves and simplifies surfacing, production, cleaning and finishing in various industrial fields. Cleaning welds, cleaning carbon rust and oxidation from surfaces to prepare for painting or pickling. Threads, springs and mechanisms are cleaned by the pulsing oil that is sprayed from the gun.



Gun for sandblast or spray

Features: Air operated, portable and efficient. The gun leaves no buffing marks, no grooves or ridges or uneven surfaces. A turbulence shield stops and retains the bulk of spent abrasive that ricochets from surface being treated. Gun balances perfectly in the hand.

Description: Gun connects to any air line. The nozzle is easily changed by loosening a retaining nut and slipping another nozzle in place. The two attachments that provide such a wide range of service are the "abrading" case hardened nozzle and the "solvent nozzle". The "abrading" nozzle has a safety tip that shows wear when the barrel requires replacement.

Maximum air consumption is 9 1/2 fpm at 100-150 pounds pressure. The container is of three pint capacity. Abrasive which collects in cup may be saved. In operation, gun is usually held from 1 to 1 1/2 inches from surface.

Source: "Enpro" blast gun is made by Engineered Products, Inc., Dept. CP, 1224 Speer Blvd., Denver, Colo. . . . or for more information check CP 9925 on handy form, pages 2 and 3.

Lathes are subject of 64-page catalog

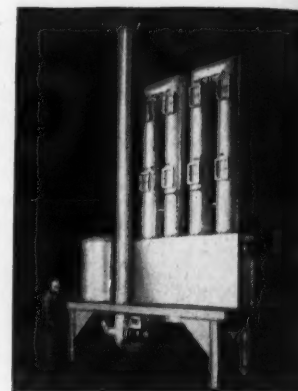
64-page general catalog covers complete line of 9 to 16/24" swing Precision Quick Change Gear and Tool-room Lathes and 1/2 and 1" collet capacity turret lathes.

55 pages of full-color illustrations and lathe specifications; 8 pages of

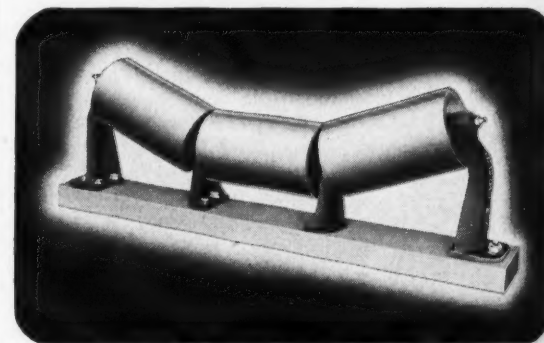
BRIGHTON COPPER WORKS INC. DELIVERS ANOTHER FUME SCRUBBER

Specially built to meet purchasers requirements

This specially designed fume scrubber is fabricated of stainless steel. Floor space required is 4' x 15'. The scrubber is 20' high. This unit was completely designed, engineered and built by Brighton Copper Works for eliminating obnoxious fumes. The company also designs and fabricates all types of varnish, synthetic and process equipment. Address inquiries to Brighton Copper Works, Inc., Brighton Station, Cincinnati, Ohio.



When inquiring check CP 9926 on handy form, pgs. 2-3



Only Robins Idlers . . . give you these advantages

- 1. One-Shot Lubrication.** Requires only *half* the time to lubricate . . . only *one* walkway on your conveyor!
- 2. Triple-Grease Seal.** Seals grease in—locks dirt out. Patented . . . exclusive . . . effective!
- 3. Rigid Truss Construction.** Entire end bracket, center bracket and pulleys form a single unified member—stronger than *any other type of construction!*

Made in troughing and return types, roller or ball bearing. Prompt delivery. Write for bulletin 120-A1.

ROBINS HR IDLERS

ROBINS CONVEYORS DIVISION

HEWITT-ROBINS INCORPORATED, PASSAIC, NEW JERSEY

When inquiring check CP 9927 on handy form, pgs. 2-3

CHEMICAL PROCESSING Preview

CUSTOM FORMED

by **LENAPE**

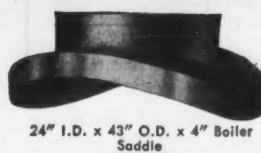
Economy in short run special formed parts can be achieved by reference to Lenape for consideration and recommendation—when within this scope . . .

- * Circular or Symmetrical Form.
- * Plate made from 1/4" to 4" gage, to 48" diameter.
- * Forged Discs to 24" diameter.
- * Billets to 14" diameter upset, forged and pierced.
- * Code welded composite parts.

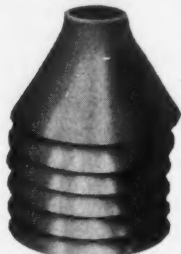
You are invited to send sketches or prints to our Engineering Department—they will give quick information on service within our range.



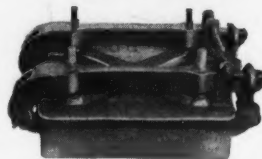
LENAPE HYDRAULIC PRESSING & FORGING CO.
DEPT. 100 WEST CHESTER, PA.
810 MAIN ST. PRODUCTS



24" I.D. x 43" O.D. x 4" Boiler Saddle



Press formed Rocket Nozzles—5" throat 16" O.D. vent.



20" x 24" Door for Gas Generator.

PROCESSING EQUIPMENT

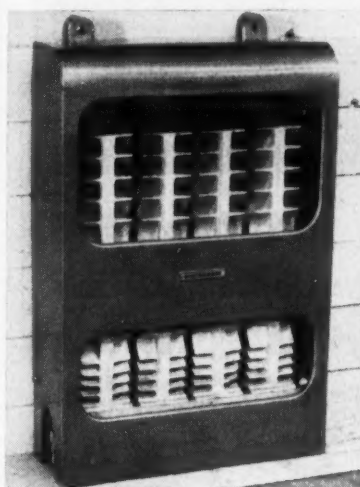
lathe attachments and accessories; also drawings showing required floor space for various lathes. Maker's new precision drill press is described.

Cat. 100-G, issued by South Bend Lathe Works, Dept. CP, 355 E. Madison St., South Bend 22, Ind. When inquiring specify CP 9930 on handy form, pages 2 and 3.

Safely heat hazardous spaces; elements insulated in tubes embedded in casting . . .

all-electric explosion-proof heater fills Class 1, group D needs

Uses: Especially designed for use in atmospheres containing gasoline, petroleum, naphtha, acetone, benzol, lacquer, solvent vapors and natural gas, all locations specified by Underwriters' Laboratories in Class 1, group D. In addition, they may be used in places where flammable gases, mixtures or other highly flammable substances are manufactured, used, handled or stored in other than their original containers



2000 watt heater

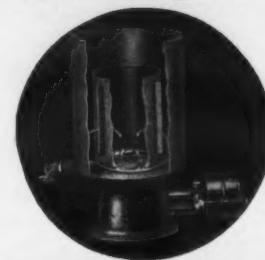
Features: A patented cast aluminum, natural convection safety grid remains at low operating temperature, has high thermal conductivity and is impervious to corrosion and deterioration. The heating element which is employed consists of nickel chromium resistor wire.

Description: Three models: 2000, 4000, and 6000 watts. First two supplied for operation on 240 and 480 v., single phase; 6000 watt for same voltages but also three phase.

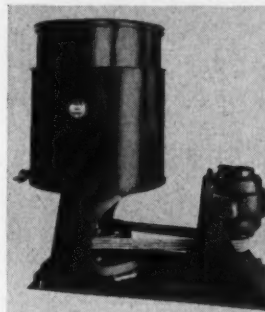
Source: Electromode Corp., Dept. CP, 45 Crouch St., Rochester, N. Y. . . . or for more information check CP 9931 on handy form, pages 2 and 3.

Amazing Time and Labor Savings More Uniform Quality Produced by **ABBÉ-DISPERSALL MIXER**

Combines
Kneading, Grinding,
Dispersing and
Thinning Action
in One Operation



Employs ribbed disc and baffled agitator mechanism to provide rapid disintegration and dispersion of solids in vehicle into a homogeneous finished product. Cuts power, time, cleaning, labor. Sizes to 330 gal.



Jacketed, stainless steel Dispersall drive.

In a Dispersall you can run several processes in one operation, in one-half to one-fifth the time required where separate operations in separate machines are employed.

Whether used for dissolving or dispersing solids in liquids, mixing two or more liquids together, or preparing emulsions or pastes, the Abbé-Dispersall Mixer assures a finished product which meets the highest standards of quality.

Savings as high as 60% in labor and power costs, and reduction in processing time, handling, investment and maintenance of equipment, have been experienced with the installation of Dispersall Mixers.

The Dispersall is readily adapted to mixing or processing under vacuum or pressure. It is ideal for evaporating, de-airing, combining gas with mixtures or producing rapid chemical reactions.

Catalog No. 62 tells the whole story.

ABBÉ ENGINEERING CO.
46 CHURCH STREET, NEW YORK 7, N. Y.

When inquiring check CP 9932 on handy form, pgs. 2-3

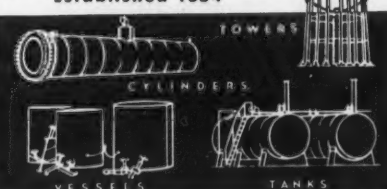


COLE ALUMINUM TANKS

R. D. COLE
MANUFACTURING CO.
NEWNAN, GA.

We have available stock sizes from 9,500 to 22,000 gallons for pressure storage, and tanks of 99.6% pure aluminum for hydrogen peroxide from 5000 to 11,150 gallons. "Cole" can furnish tanks made of steel, aluminum and stainless steel — built in accordance with ASME Code — to meet all insurance requirements. We invite your inquiries for high pressure storage tanks, elevated tanks, acid or oil storage tanks, bins, boilers, stacks, etc.

Established 1854



When inquiring check CP 9933 on handy form, pgs. 2-3

Step up production

Modernize your industrial filtration! With the Sperry EHC-L Closing Device, filter press operation becomes automatic — saves money, increases production.

Now one person — man or woman — can operate the largest press without hazard. This electric-hydraulic unit actuates the head, forward and back — pushes back the empty plates. Controlled by simple adjustments at only two points — no hand pumping. And it's easily installed on any filter press.

Write for complete information on the EHC-L Closing Device today.

D. R. SPERRY & CO. Batavia, Illinois
Filtration Engineers for over 50 years
Eastern Sales Rep. Western Sales Rep.
J. E. Jacoby, M. E. B. M. Pilashy
205 E. 42nd St. 833 Merchants Exchange Bldg.
New York 17, N. Y. San Francisco, Cal.
Phone: MUrray Hill 4-3581 Phone: DO 2-0375

**SPERRY
FILTER PRESSES**

When inquiring check CP 9929 on handy form, pgs. 2-3



Cuts Pump Upkeep

**COST DOWN MORE
THAN HALF IN 4
YEARS SERVICE AT
MICH. CITY PLANT**

SAYS A. C. LOHSE, General Power Engineer, Pullman-Standard Car Manufacturing Company — "Maintenance costs on our old pump were sky-high, so in March, 1945, we installed this *Electrifugetal* pump to move condensate from our compressors and hydraulic pumps. It has run 16 hours a day, five days a week with only routine maintenance and one repacking. Cost per gallon is less than half what it was and performance is much more dependable."

This is the kind of dependable, cost-lowering service you can get from *Electrifugetal* pumps. Motor and pump are

mounted on *one* shaft in *one* solid frame for maximum rigidity. Feet are wide spread for firm support. Bronze ring protects casing from wear by impeller and is easily replaced when required.

Every *Electrifugetal* pump is tested at the factory. Performance is guaranteed.

Allis-Chalmers makes hundreds of pumps for many types of service. For full information, see your A-C Authorized Dealer or District Office, or write for Bulletin 52B6059E. Also in Sweet's. A 2640

ALLIS-CHALMERS, 1151A SO. 70 ST.
MILWAUKEE, WIS.

Electrifugetal, *Texrope* and *Vari-Pitch* are Allis-Chalmers trademarks.

ALLIS-CHALMERS

When inquiring check CP 9934 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

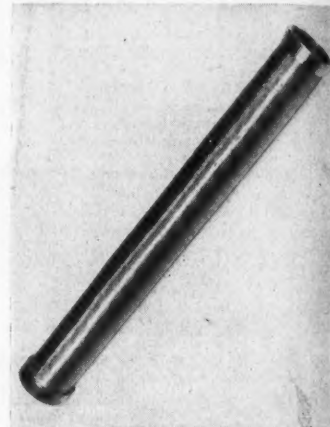
Wire mesh membrane used in filtration . . .

used with either Filterbestos or diatomaceous earth
Uses: Wire mesh membrane for use in any standard Titeflex filter.

Useful with either Filterbestos or diatomaceous earth a filtering mediums, and interchangeable with porous stone membranes in filters of this make. For successfully withstanding high pressures or temperatures.

Since they can be used to filter any solution which does not attack Type 316 stainless steel, their range of application is very broad. When solutions have fairly large suspended particles and only a fine straining operation is required, they can be used without a filtering medium.

Features: No danger of plugging, since wall of cylinder is very thin. Wire mesh construction eliminates possibility of breakage.



Wire mesh filter membrane

Description: Unit is a cylinder constructed of Type 316 stainless steel Dutch weave wire cloth and supported on inside by a 1/16"-thick, perforated cylinder with ring on each end to act as bearing surface.

Mesh of standard membrane is 20 x 250, but membranes can be furnished in any mesh required. All joints of membrane are welded. Either wire mesh or porous stone membrane is supplied as standard, according to user's desire.

Source: A development of Titeflex, Inc., Dept. CP, 600 Frelinghuysen Ave., Newark 5, N. J. . . or for more information check CP 9935 on handy form, pages 2 and 3.

Pre-freeze, condense in same compressor with flexible freeze dryer . . .

requires neither dry ice nor desiccant; has 12 sq. ft. shelf area; requires little attention

Uses: Self-contained freeze dryer for research and development technicians. For handling any type product, in bulk or containers.

Features: Twelve sq. ft. of shelf area. Designed to permit use of one compressor for both pre-freezing and condensation, rather than the conventional two. Installation, operation and servicing are thus simplified. Neither dry ice nor desiccant required. Combines efficiency of large-scale units with flexibility and compactness of small lab models. Requires minimum attention.

Description: Consists of welded steel vacuum shelf dryer with two dryer shelves; a motor-driven pump to circulate electrically-heated, thermostatically-controlled hot water; Freon compressor; high vacuum pump with centrifugal oil clarifier; vacuum piping and valves; complete insulation; controls and instruments.

Per day capacity (500-10 cc containers), 5 litres; 2-day cycle capacity (32-300 cc containers), 10 litres; drying shelf area, 12 sq. ft.; shelf clearance, 3-1/2"; electrical

Sold . . .

Applied . . .

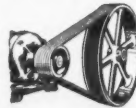
Serviced . . .

by Allis-Chalmers Authorized Dealers,
Certified Service Shops and District
Offices throughout the country.



MOTORS — 1/2 to
25,000 HP and up.
Matching Allis-Chalmers
Control.

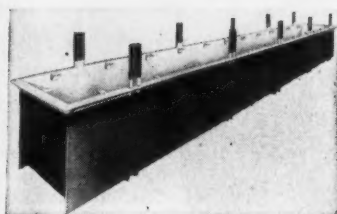
TEXROPE — Belts in
all sizes and sections,
standard and Vari-
Pitch sheaves, speed
changers.



PUMPS — Integral
motor and coupled
types. Sizes and ratings
to 2500 GPM.



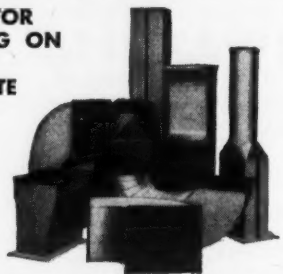
Engineered RUBBER INSULATED EQUIPMENT FOR HANDLING CORROSIVES



PROCESSING TANKS

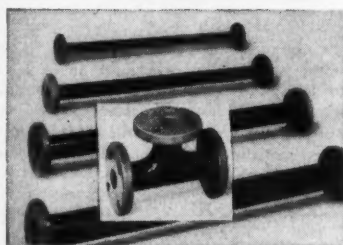
Any size, any shape, open or closed, fabricated and/or rubber lined for all chemical processing.

WRITE FOR
CATALOG ON
OUR
COMPLETE
LINE



EXHAUST SYSTEMS

Ducts, vents, hoods, housings, fabricated and/or rubber lined. All joints companion flanged.



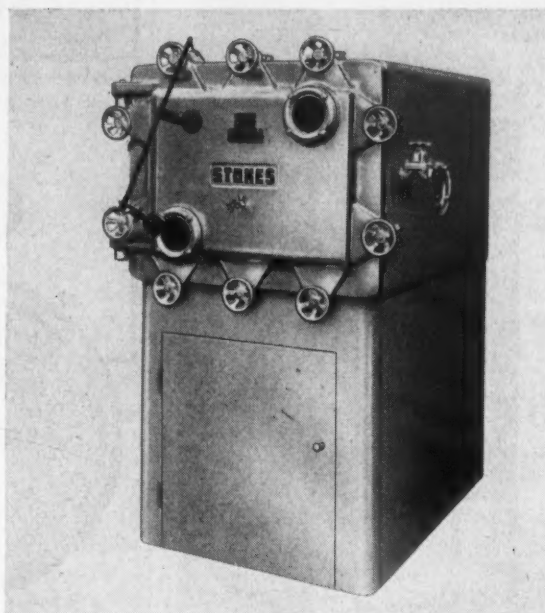
PIPE and FITTINGS

Flanged type, lined with natural or synthetic rubber. Steel, cast or wrought iron. 1 1/2" I.D. and up.

AUTOMOTIVE RUBBER CO. INC.
8601 EPWORTH BOULEVARD
DETROIT 4, MICHIGAN

When inquiring check CP 9936
on handy form, pgs. 2-3

PROCESSING EQUIPMENT



Self-contained freeze dryer

requirements, 7-1/2 kw; height, 5'0"; required working area, 30 sq. ft.; weight, 1,850 lbs.

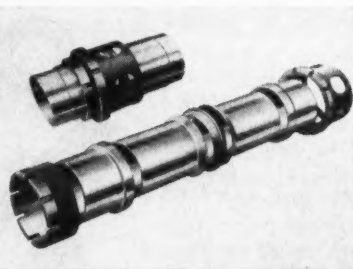
Source: Model 2004-L is a development of F. J. Stokes Machine Company, Dept. CP, 5900 Tabor Rd., Philadelphia 20, Pa. . . or for more information check CP 9937 on handy form, pages 2 and 3.

**Fast, lightweight union
joins tubes, saving
space, weight . . .**

weight-saving of 1 1/2 lbs. in 1 1/2" steel size reported

Uses: Single-thread tube union for joining flared tubing. Especially useful in fluid lines where heavy fittings and close line spacing create serious weight problems and excessive maintenance costs.

Features: Makes a fast, lightweight connection. Single-threaded construction is adapted to standard commercial spanner wrenches. Coupling nut incorporates visual inspection ports which further lighten the unit. Compared to conventional unions, the 1 1/2" size, in steel, represents a weight saving of 1 1/2 lbs, manufacturer reports.



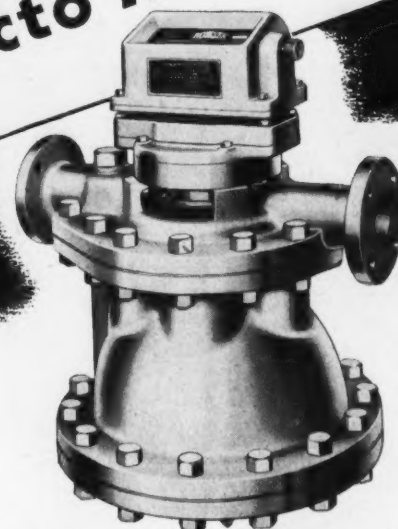
Single-thread tube union

Description: Used with flared tube ends, this 1900 Series union consists of 5 parts: a metal seal ring, 2 sleeves, a threaded clamp ring and mating coupling nut.

Available in 1 1/2, 2, 2 1/2, 3 and 4" sizes, in steel or aluminum alloy material.

Source: Produced by Roylyn, Inc., Dept. CP, 718 W. Wilson Ave., Glendale 3, Calif. . . or for more information check CP 9938 on handy form, pages 2 and 3.

BOWSER ESTABLISHED 1885 STAINLESS STEEL Xacto Meters



**. . . for any liquid that can be
handled with stainless steel**

This precision* meter is now used in many chemical plants for the measurement of corrosive liquids not handled by conventional meters.

It lowers liquid processing costs by reducing man-hours, space requirements and piping . . . by eliminating gage tanks.

**BOWSER PRECISION MEASUREMENT
ASSURES PROCESSING UNIFORMITY**

**Bowser Stainless Steel Xactos are
handling these and other liquids:**

| | |
|------------------|-----------------|
| Acetic Anhydride | Calcium |
| Alum Solution | Bisulfite |
| Ammonium | Carbolic Acid |
| Chloride | Cellosolve |
| Ammonium | Acetate |
| Nitrate | Copper Nitrate |
| Ammonium | Copper Sulphate |
| Phosphate | Cresol |
| Ammonium | Cresylic Acid |
| Sulphate | Iso-Propyl |
| Amyl Acetate | Acetate |
| Anhydrous | Lactic Acid |
| Ammonia | Napthenic Acid |
| Aqueous Ammonia | Resin Alkyd |
| Arsenic Acid | Stearic Acid |
| Butyl Acetate | Tannic Acid |

Xacto meters are also available for other liquids in gray iron and bronze construction with special carbon valves, pistons and bearings.

The Bowser automatic proportioner—for two or more liquids—records the quantity of each ingredient as well as the total finished product. **UNIFORMITY OF PRODUCT IS GUARANTEED!**

Please write for complete information on Bowser precision meters for Chemical Plants.

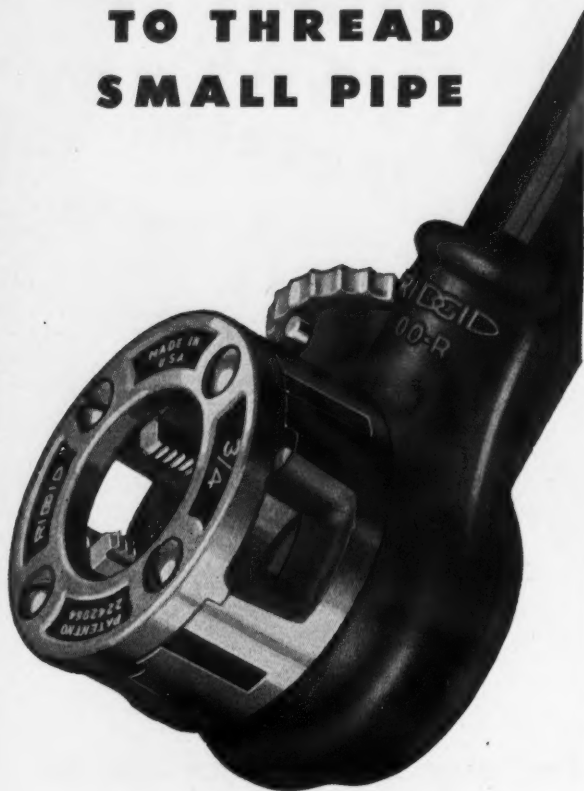
*Accuracy as close as .01%.

BOWSER, INC., 1325 Creighton Avenue, Fort Wayne 2, Indiana

LIQUID CONTROL SPECIALISTS SINCE 1885

When inquiring check CP 9939 on handy form, pgs. 2-3

Now it's a Cinch TO THREAD SMALL PIPE



RIGID Ratchet Threaders No. 00R, 111R and 12R are extra handy for 1/8" to 2" pipe

● Light strong efficient **RIGID** ratchets give you perfect threads on 1/8" to 2" pipe — fast, without bothersome get-ready. Precision cut tool-steel dies. Die heads snap into ratchet ring from either side, can't fall out. You don't need special dies for close-to-wall threads. No. 00R, 1/8" to 1" pipe; No. 111R, 1/8" to 1 1/4"; No. 12R, 1/8" to 2" Conduit dies furnished on request. Buy these handy work-savers at your Supply House.

RIGID
WORK-SAVER PIPE TOOLS
THE RIDGE TOOL CO. • ELYRIA, OHIO

When inquiring check CP 9940 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

Constant temperature-humidity held by test cabinets . . .

model described has constant-level ranges of room-temp. to 140°F., 30 to 98% humidity

Uses: Test cabinets for holding temperature and humidity at constant levels in temperature range between room temperature and 140°F., and in humidity range of 30 to 98%.

Features: Operation is entirely automatic, requiring minimum attention from the operator. Once set for desired temperature, unit reliably holds it within a plus-minus range of 1°, and humidity within a range of plus or minus 1°F., wet bulb, manufacturer reports.

Description: Also furnished in other models which permit lower temperature control and lower humidity ranges. These are described in a bulletin.

Source: Manufactured by Food Technology, Inc., Dept. CP, 5903 Northwest Highway, Chicago, Ill. . . . or for more information check CP 9941 on handy form, pages 2 and 3.

Easily convert exchanger elements from single to double pass . . .

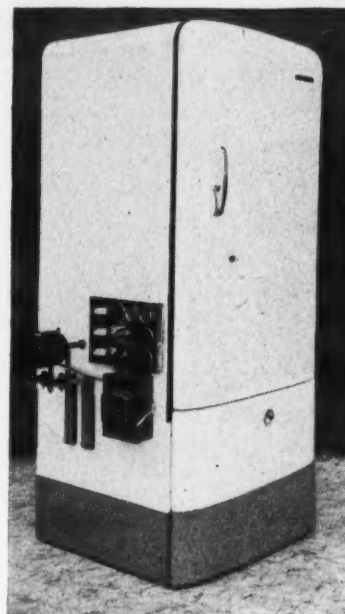
also easy to replace tubes in field; two sizes have tube areas of 16.4 and 24.6 sq ft.

Uses: For efficient heating and cooling of corrosive fluids.

Features: Basic elements of the unit may be converted from a single pass to a double pass unit by a simple change of covers. This gives the exchanger added utility without affecting its original efficiency. Also, damaged tubes can be replaced quickly and easily in the field. It is no longer necessary to reduce the capacity by blocking off damaged tubes.

Description: Two standard sizes are carried in stock. Size 76 and size 79. These units are identical in construction except in overall length.

The "Karbate" impervious graphite tube bundle contains seven 1 inch ID by 1 1/2 inch OD tubes mounted in "Karbate" tube sheets. The floating tube sheet and head cover are integral. The removable head cover is available in either single pass or two pass construction, the two types being readily interchangeable. An optimum number of conventional segmental type steel baffles are furnished on the shell side of the tube bundle. The shell is 6 inches ID standard steel pipe.

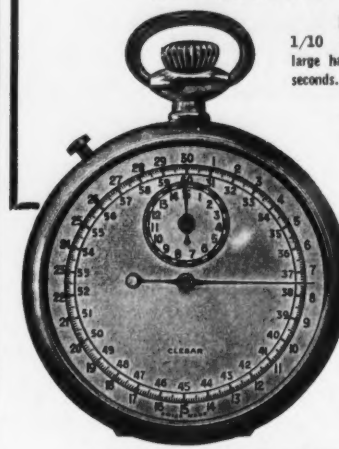


Constant
temperature-humidity cabinet

Accurate STOP WATCHES

For unflinching accuracy in timing you can rely on Clebar precision timers. They have proved their dependability in many leading laboratories and industrial plants.

CLEBAR TIMERS MEET THE REQUIREMENTS OF
THE NATIONAL BUREAU OF STANDARDS
STOP WATCH PRECISION TEST.



No. 390 CLEBAR Timer
1/10 second, 15 minute register;
large hand makes one revolution in 30
seconds. Start, stop, start again from
crown; push button returns
to zero 7 jewel non-magnetic
movement, nickel chrome case.

No. 654 CLEBAR Timer
(Not Illustrated)

1/5 second, 30 minute
register; Start, stop,
start again, from crown;
push button returns
to zero. Nickel chrome case,
7 jewel non-magnetic
movement.

EVERY CLEBAR TIMER IS ELECTRONICALLY SET,
RIGIDLY TESTED, AND GUARANTEED FOR ONE YEAR.
If interested in other models, send for Illustrated Catalog CP

CLEBAR WATCH CO., Inc.
551 FIFTH AVENUE NEW YORK 17, N. Y.

When inquiring check CP 9942 on handy form, pgs. 2-3

Anti-Corrosive STAINLESS STEEL FASTENINGS DO THE JOB Better

**There's No Substitute for
Stainless Fastenings in the
Chemical Industry!**

The tougher the specification, the better
suited stainless fastenings are in chemical
processing! Permanent, corrosion-resistant,
easy to break down for cleaning, safe and
sanitary . . . and best of all, stainless cuts
costs with longer life and lowered main-
tenance.

7,000 Varieties

Anti-Corrosive, America's oldest and largest
supplier dealing exclusively in stainless
fastenings, carries this tremendous stock for
your convenience . . . plus a special order
service available for occasional odd sizes.

Write Today for Folder D-49 for Further
Information!

Anti-Corrosive
Metal Products Co., Inc.
Manufacturers of STAINLESS STEEL FASTENINGS
CASTLETON ON HUDSON, NEW YORK

When inquiring check CP 9943 on handy form, pgs. 2-3

PROCESSING EQUIPMENT

Operating pressures up to 50 lbs. square inch (gauge) steam and 75 lbs. square inch (gauge) hydrostatic and temperatures which keep the body of the heat exchanger below 338 degrees F. are recommended.

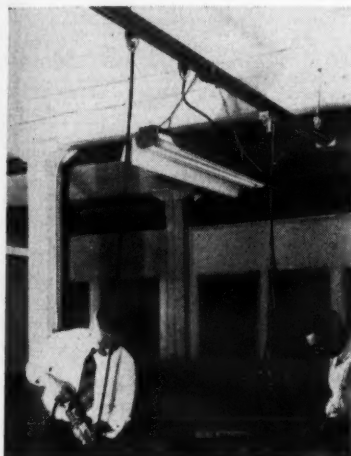
Source: National Carbon Co. Inc. (Unit of Union Carbide & Carbon Corp.), Dept. CP, 30 E. 42nd St., New York 17, N. Y. . . . or for more information check CP 9944 on handy form, pages 2 and 3.

"Take-a-part" plug-in busway serves fluorescent lights and power tools . . .

plugs polarized so that loads may be balanced conveniently on both sides of busway

Uses: Designed to provide both trolley power take-off and continuous outlet for fluorescent lights and small power tools.

Features: Described as only busway of its type in 2, 3, or 4 pole construction with one compact housing. Easily taken apart for re-use or relocation without scrapping a single part.



Power take-off and continuous outlet for fluorescent lights, power tools

feature is that this busway permits balanced loads. Plugs and trolleys are polarized so that loads may be balanced conveniently on both sides of the busway.

It is built in standard fittings such as elbows and radius sections so that custom-engineered installations can be achieved economically.

Source: The LTG Flex-a-power plug-in or trolley busway is built by The Trumbull Electric Mfg. Co., Dept. CP, Plainville, Conn. . . . or for more information check CP 9945 on handy form, pages 2 and 3.

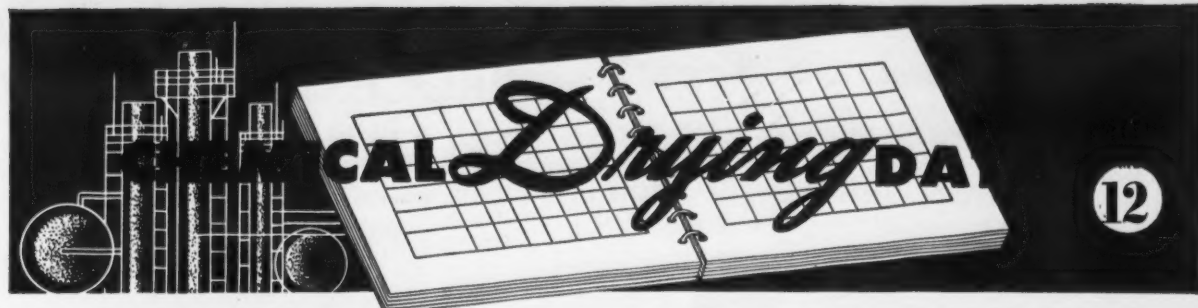
Features, operating principles of water cooling towers

Series of 4-page, 2-color bulletins, in questionnaire form, discuss water cooling towers. Water distribution, air movement, design, maintenance, structure, and performance are among subjects covered.

"Cooling Tower I.Q. Quizzes", issued by The Marley Co., Inc., Dept. CP, Fairfax and Marley Roads, Kansas City 15, Kansas. When inquiring specify CP 9946 on handy form, pages 2 and 3.

Simplified hanging and joining methods speed up installations 30% and make the busway extremely easy to install.

Description: Rated 50 amperes, 250 volts, AC or DC and has two or more circuits that can be run in one housing and still be controlled separately. This advantage was intended to save space and make a generally more compact arrangement. An unusual



12

PUBLISHED MONTHLY FOR PROCESS INDUSTRIES EXECUTIVES AND OPERATING PERSONNEL

THRU-CIRCULATION TRAY DRYERS speed processing, where physical characteristics of product permit

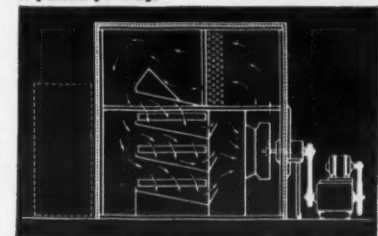


Left and above—Typical installation of "thru-circulation" tray dryer.

engineers will be able to determine how well this type of system is suited to your individual needs—and will be able to recommend the size of the system best suited.

When writing for further information—give as complete details as possible about your drying problem to enable Proctor engineers to answer your initial inquiry most intelligently.

Much Proctor drying equipment and textile machinery is covered in full or in part by patents or patents pending.



Cross section of "thru-circulation" tray dryer.

Where the physical characteristics of the product to be dried are such that air can be circulated *through* the bed of material on the tray—the Proctor Thru-Circulation Tray Dryer may be employed to speed processing. By circulating heated air through the bed of material (rather than simply across) more rapid diffusion takes place. This not only speeds drying—but assures the product being uniformly dried all the way through. The circulation is similar to that employed in continuous conveyor drying. The difference is that in the thru-circulation tray dryer, the material remains stationary while in a con-

tinuous conveyor system it is carried through the drying chambers. It is obvious, therefore, that the output possible with the thru-circulation tray dryer is greater than with an ordinary cross circulation tray dryer—but not as great as with continuous conveyor drying systems, or even truck-tray systems. Temperature, humidity and air-circulation can be carefully controlled in these dryers to further govern drying results. The dryers may be furnished with automatic temperature controls for dry bulb only or for wet and dry bulb.

By careful study of your product and output requirements Proctor

When inquiring check CP 9947 on handy form, pgs. 2-3



Instantly ready for use with an ample supply of cool, confidence-inspiring air (not oxygen) the Scott Air-Pak permits rapid, thorough emergency work in toxic areas with minimum production "time-out" required.

In addition, Scott Air-Pak models in Back-Pak, Senior Sling-Pak (illustrated) and Extension Hose Assembly provide selectivity of equipment for particular operational or emergency needs.



Write for full information on Scott Air-Paks and name of nearest distributor . . . today!



SAFETY EQUIPMENT DIVISION
SCOTT AVIATION CORP.
242 ERIE ST. LANCASTER, N. Y.

When inquiring check CP 9948 on handy form, pgs. 2-3



End
These Common
Float Failures

- Corrosion
- Lack of Buoyancy
- Collapsing
- High Replacement Cost
- High Temperature Failure

Use STAINLESS STEEL FLOATS

Standardize on Stainless Steel for all your float requirements. You'll find that the long, trouble-free service you get will literally put an end to your float maintenance problems. Costly dismantling of equipment to get at faulty floats is practically eliminated because Stainless Steel Floats from Chicago Float Works will function efficiently for many years, often for the life of the equipment in which they are installed. At Chicago Float Works you get the advantage of a complete line of standard sizes, shapes, and spud connections to choose from. Pressures to 1000 lbs.; temperatures to 800°F. Also special floats made to order. Monel and Nickel floats available for special applications.

SEND FOR COMPLETE CATALOG TODAY

CHICAGO FLOAT WORKS, INC.
2340 S. Western Ave., Chicago 8, Illinois

When inquiring check CP 9949 on handy form, pgs. 2-3

Discussed in This Issue--- PROCESSES, EQUIPMENT and MATERIALS

Use this "quick-locator" when you want information on a specific type of process, equipment or material mentioned in the processing stories or the advertisements in this magazine. Everything discussed in this issue is given here, if you want more data you can write manufacturer direct . . . or turn to pages 2 and 3 and use the handy "Information Request Slip." This is a special service provided by the publisher . . . no obligation or charge, of course. The publisher contacts the proper manufacturers for you—information comes to you direct.

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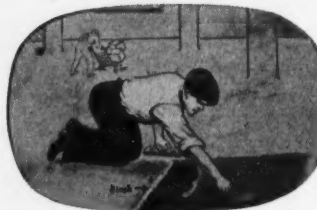
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APRIL, 1949

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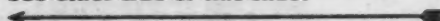
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Ceramic curing without fire

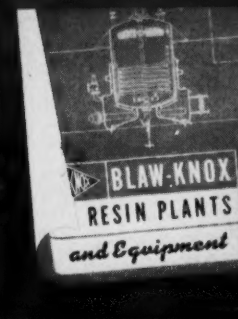
A revolutionary process does away with fire and kilns in baking brick and curing pottery. The ceramic curing method uses a combination of infra-red and induction heating. (Nat'l. Patent Council—Gary, Ind.)



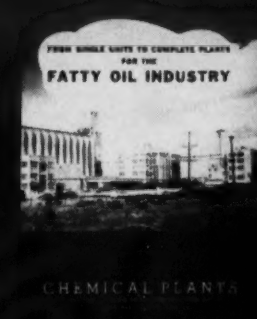
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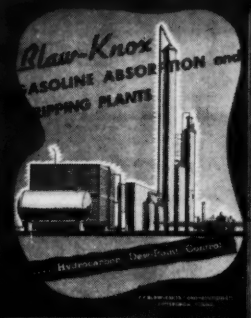
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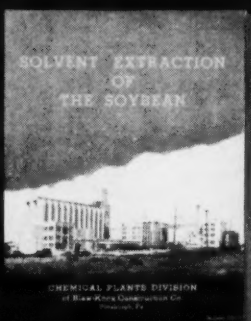
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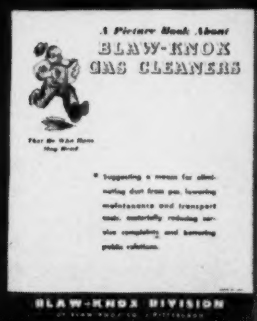
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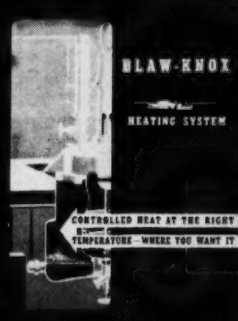
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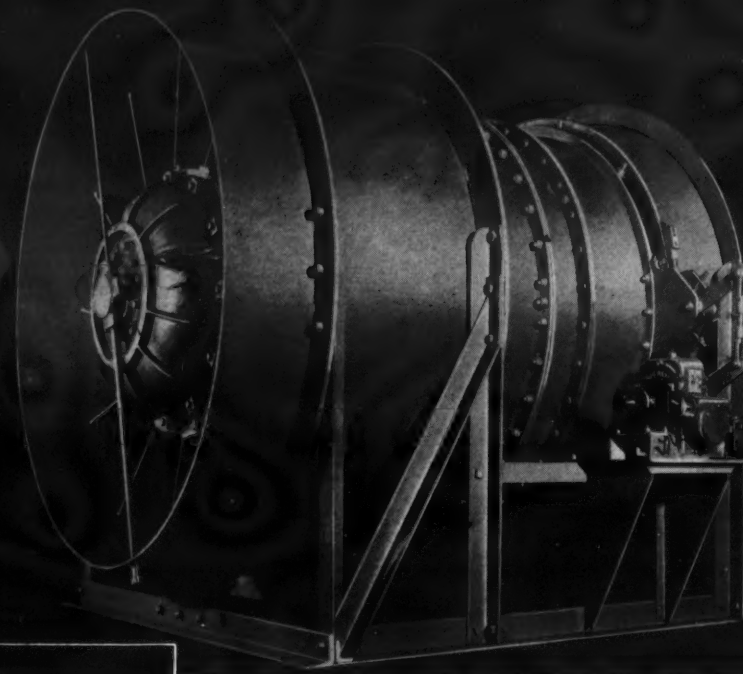
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